

NEW SPECIES AND RECORDS OF INDO-AUSTRALIAN PSENINI (HYMENOPTERA, SPHECIDAE, PEMPHREDONINAE)

by

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With 53 text-figures

ABSTRACT

The following new species and subspecies are described and illustrated: *Psen (Psen) nitidus sabahensis*, Sabah, *nitidus binghami*, Sikkim, *elisabethae umboiensis*, New Guinea, *elisabethae bougainvillensis*, Solomon Is., *Psen* (subgenus?) *anodontotus*, New Guinea, *Psen (Mimumesa) oresterus*, West Pakistan, *Psenulus major*, Laos, *decipiens*, Laos, *laosensis*, Laos, *armipes*, Philippine Is., *tectus*, Laos, *anomalous*, Vietnam, *vaneuensis*, Laos, *puncticeps rufipes*, Sumba, *exiguus*, Laos, Malaya, *suturalis*, Laos, *crabroniformis wapiensis*, Laos, *crabroniformis nathani*, South India, *limbatus*, Laos, *impressus*, Philippine Is., *pictus*, New Guinea, *ornatus sumbaensis*, Sumba, *fyanensis*, Vietnam, Laos, *nigrolateralis*, Laos, *vientianensis*, Laos, *leucognathus*, South India. Many new records of known species are given, in some cases also a description of the hitherto unknown opposite sex. *Psen (Mimesa?) inflatus* is transferred to the subgenus *Psen*.

During the past decade, many Psenini have been collected in the Indo-Australian area. Special mention should be made here of the rich material gathered in Laos by native collectors for the Bishop Museum, Honolulu. Thus far no Psenini were known from that country. Now 17 Laotian species and subspecies can be listed, of which 12 are described here as new. Ten of these forms are recorded from Laos only. Much new information has also been obtained with regard to the distribution of earlier described species.

The male genitalia have been figured as much as possible. It is obvious that comparison of the parameres is of good assistance in the classification in species groups or subgenera. Since my last key to the Indo-Australian species of *Psenulus* (1962) the number of forms has more than doubled and now amounts to 134. A new key for *Psenulus* is now in preparation. Notwithstanding the progress made our knowledge of the Indo-Australian Psenini is still very incomplete; much more collecting in this region is highly desirable. Of only 36 forms both sexes are known. For 62 females and for 36 males the opposite sex has not yet been found or recognized. For the genus *Psen* the figures are somewhat better (40, 31 and 18, respectively). We know very little about their bionomics. Best known in this respect is *Psenulus sogatophagus* Pagden, 1933. Dr. D. H. Murphy, Singapore, kindly provided some information regarding nesting and prey of *Psenulus trimaculatus*.

I am much obliged to the Bishop Museum and all other friends and institutions who sent me their material for study. Their names are given below together with the symbols used in the text. Special thanks are due to Prof. J. van der Vecht, who stimulated me long ago to study the Psenini and continues to show interest, and to

Mrs. E. van der Vecht-Bourguignon who collected two new species during their visit to New Guinea in 1972.

- AMNH — The American Museum of Natural History, New York, N.Y., U.S.A.; Mrs. M. Favreau, J. G. Rozen Jr.
- BISH — Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.; Miss A. Manning, F. J. Radovsky
- BM — British Museum (Natural History), Department of Entomology, London, U.K.; L. A. Mound, C. R. Vardy
- CGR — C. G. Roche, Kuala Lumpur, Malaysia
- CNC — Entomology Research Institute, Canada Department of Agriculture, Ottawa, Canada; J. Barron, L. Masner, C. M. Yoshimoto
- ELW — Laboratorium voor Entomologie, Wageningen, The Netherlands; via J. van der Vecht
- HT — H. and M. Townes, American Entomological Institute, Ann Arbor, Michigan, U.S.A.
- MA — Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Afdeling Entomologie, Amsterdam, The Netherlands; J. P. Duffels, W. N. Ellis
- ML — Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands; J. van der Vecht
- NMB — Naturhistorisches Museum, Basle, Switzerland; via J. van der Vecht
- UI — University of Idaho, Department of Entomology, Moscow, Idaho, U.S.A.; A. R. Gittins
- US — University of Singapore, Singapore; D. H. Murphy
- USNM — National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.; P. D. Hurd, K. V. Krombein, A. S. Menke

Psen Latreille
Subgenus **Psen**

Psen (Psen) emarginatus Van Lith

Van Lith, 1959: 43—44 (Java); 1968: 101—102 (N. Borneo).

New record from Borneo: 1 ♀ and 1 ♂, Sabah, Mt. Kinabalu, 5000 ft, 1—5 May 1973, K. M. Guichard (CGR).

Psen (Psen) rufoannulatus Cameron

Cameron, 1907: 90 (India: Simla).

Van Lith, 1965: 58—60; 1973: 125—126 (Nepal).

New record from Nepal: 1 ♂, Kathmandu, 1300—1400 m, 7—12 May 1960, J. and M. Sedlacek (BISH).

Psen (Psen) nitidus nitidus Van Lith

Van Lith, 1959: 28—30 (Java, Bangka, Krakatau, Sri Lanka); 1968: 105—106 (S. India, NE. Sumatra).

First record from Malaya: 1 ♀, Johore, Kr. Pulai, 21 Dec. 1967 (CGR).

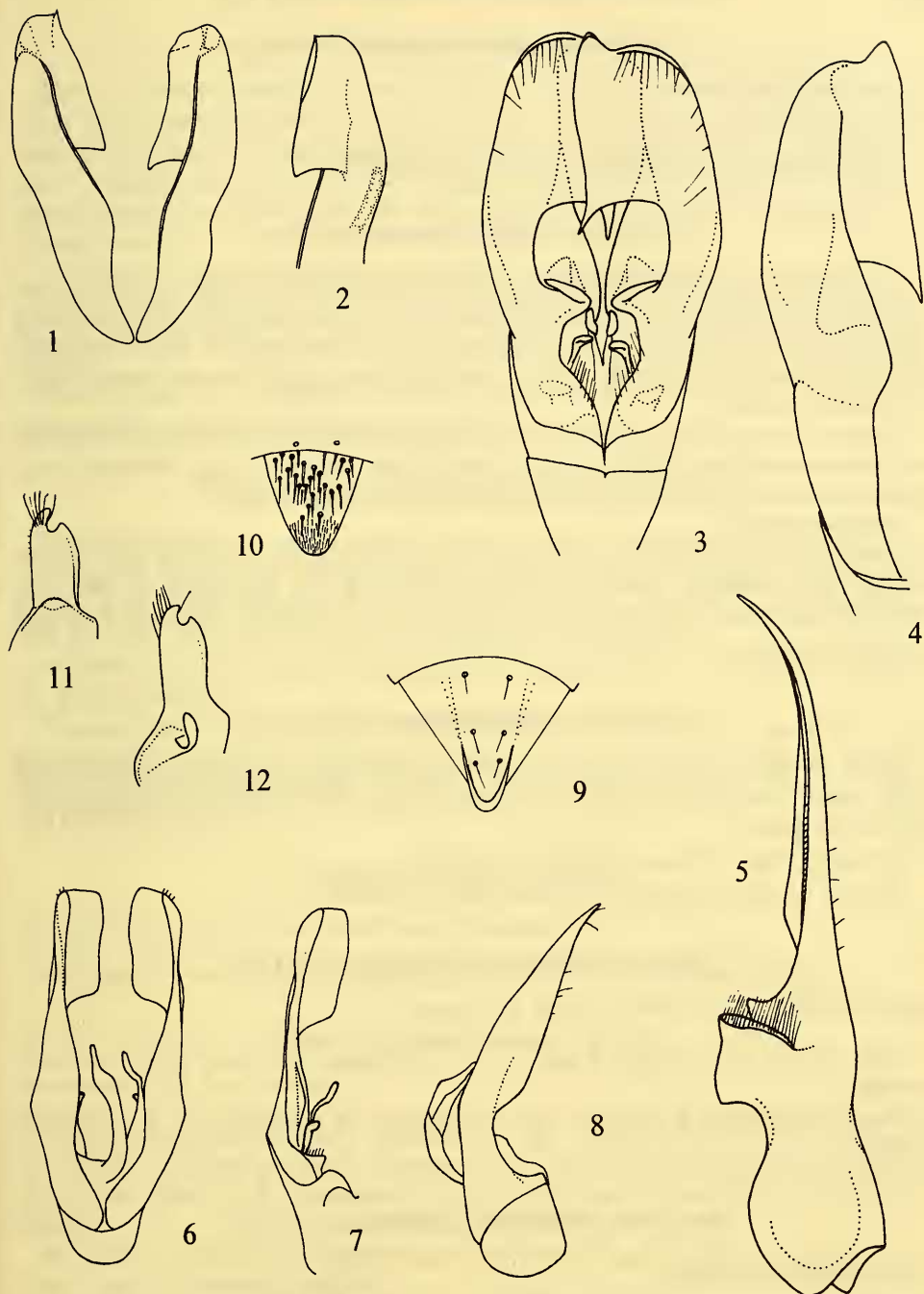


Fig. 1—2. *Psen (Psen) nitidus binghami* subsp. nov., ♂, holotype, outer parts of genitalia, dorsal aspect, paramere, ventral aspect. Fig. 3—4. *Psen (Psen) elisabethae umboiensis* subsp. nov., ♂, holotype, genitalia, ventral and dorsal aspect. Fig. 5. *Psen (Psen) elisabethae bougainvillensis* subsp. nov., ♂, holotype, 8th sternite, lateral aspect. Fig. 6—8. *Psen (Psen) inflatus* Van Lith, ♂, genitalia in dorsal, ventral and lateral aspect. Fig. 9. *Psen anodontotus* sp. nov., pygidial area of ♀, holotype. Fig. 10—12. *Psen (Mimusesa) oresterus* sp. nov., 10, ♀, pygidial area; 11—12, ♂, paramere, outer and inner aspect

***Psen (Psen) nitidus takasago* Tsuneki**

Tsuneki, 1967: 8—9 (Taiwan).

Van Lith, 1968: 106.

New record from Taiwan: 2 ♀, Sauter coll. (AMNH).

***Psen (Psen) nitidus sabahensis* subsp. nov.**

Two females from North Borneo differ from the female of the nominate form and from the female of the subspecies *takasago* in having dark brown instead of yellowish-brown, hind tarsi. The apex of the antennae below is blackish-brown. Fore tibiae and fore and mid tarsi are reddish-brown, slightly darker than in other forms of *P. nitidus*.

Scutum more strongly punctate than in nominate form. Pygidial area broader, its base more shining and punctures along lateral margins larger. Pubescence of scutum somewhat brownish, greyish-white in the nominate form.

Male unknown.

Borneo: 2 ♀, holotype (Roche No. 15222) and paratype (Roche No. 15221), Sabah, Mt. Kinabalu, 5000 ft, 1—5 May 1973, K. M. Guichard (CGR). The holotype has been deposited by Mr. Roche in the British Museum (Natural History), London.

***Psen (Psen) nitidus binghami* subsp. nov.**

Male. — Resembling nominate form but differing in having dark brown hind tarsi, brown mid tarsi, strongly punctate scutum and brownish pubescence on thorax and gaster.

Genitalia (Fig. 1, 2) as in nominate subspecies.

Sikkim: 1 ♂, holotype, coll. Bingham 1902—120 (BM).

***Psen (Psen) elisabethae elisabethae* Van Lith**

Van Lith, 1959: 31—34 (Java, Sumatra); 1968: 106 (Vietnam).

New record from North Sumatra: 1 ♀, Sibolangit, Lörtzing (ELW ex coll. Roepke).

New record from West Java: 1 ♂, Mt. Gedeh, 14 Aug. 1965, J. E. Lukavsky (CNC).

***Psen (Psen) elisabethae madrasiensis* Van Lith**

Van Lith, 1968: 107 (S. India).

First records from Laos: Vientiane Prov., Ban Van Eue, 1 ♀, 15 Febr. 1966, Malaise trap, 1 ♂, 29 March 1966, native collector (BISH).

The face of this female is distinctly silvery pubescent. Pygidial area narrow, as in nominate subspecies.

***Psen (Psen) elisabethae umboiensis* subsp. nov.**

Male. — Much resembling nominate form. Length about 10 mm. Femora and tibiae black, tarsi yellowish-brown, antennae and tegulae black. Petiole about twice as long as first tergite. Last antennal segment over twice as long as broad at base. Pubescence of face and tempora silvery-white, mostly appressed. Pubescence of rest of body whitish, thorax dorsally more greyish. Genitalia (Fig. 3, 4) large, brown.

NE. New Guinea: 1 ♂, holotype, Umboi I., about 8 km WNW. of Lab Lab, 300 m, 8—19 Febr. 1967, G. A. Samuelson, Malaise trap; 1 ♂, paratype, Umboi I., 1 km N. Awelkom, 600 m, 21—28 Febr. 1967, G. A. Samuelson, Malaise trap (BISH).

This subspecies is distinguished from the nominate form by the larger size, longer antennae and dark legs and tegulae.

***Psen (Psen) elisabethae bougainvillensis* subsp. nov.**

Male (holotype). — Resembling preceding form. Length over 11 mm. Legs and tegulae black, tarsi yellowish-brown. Petiole about 1½ times as long as first tergite. Last antennal segment over 2½ times as long as broad at base. Punctuation fine. Pubescence as in preceding form. Eighth sternite: Fig. 5.

Solomon Is.: 1 ♂, holotype, Bougainville, Kukugai Vill., 150 m, Nov. 1960, W. W. Brandt (BISH).

The genitalia of this specimen are like those of the subspecies *umboiensis*. It is distinguished from the nominate subspecies by the dark legs, shorter petiole, longer antennae and large size. It differs from *umboiensis* by the shorter petiole and longer antennae.

***Psen (Psen) coriaceus* Van Lith**

Van Lith, 1959: 34—36 (Mindoro, Luzon, Negros, Mindanao).

New record from Luzon: 1 ♀, Baguio, June 1917, F. X. Williams (BISH).

***Psen (Psen) paulus paulus* Van Lith**

Van Lith, 1968: 113—114 (New Guinea).

New records from NE. New Guinea: 1 ♀, Mt. Missim, 980 m, Malaise trap, 20 July 1969, J. L. Gressitt and Y. Hirashima, 1 ♂, Mt. Missim, 1300 m, Malaise trap, 7—21 Dec. 1966, G. A. Samuelson, 2 ♂, Wau, 1000 m, 23 Dec. 1969, M. Sedlacek (BISH).

SE. New Guinea: 1 ♂, Mamai Pltn, E. of Port Glasgow, 150 m, light trap, 17 Febr. 1965, R. Straatman (BISH).

***Psen (Psen) bryani* Perkins & Cheesman**

Perkins & Cheesman, 1928: 28—29 (Samoa).

Van Lith, 1968: 116.

New records from Samoa: 1 ♀, Tutuila I., 9 Aug. 1957, W. R. Kellen, 2 ♂, Tutuila, Vatia, 0—200 m, 9 March 1971, N. L. H. Krauss (BISH).

***Psen (Psen) hakusanus seminitidus* Van Lith**

Gussakovskij, 1934: 7 (*Mimesa kohli*, nec *Psen kohli* Fox, 1898; China); 1937: 653 (*Psen kohli*; China, Tibet).

Van Lith, 1965: 40 (*Psen (Psen) seminitidus* new name); 1968: 119.

Tsuneki, 1966: 9—10 (*Psen (Psen) hakusanus seminitidus* new status; Taiwan); 1967: 2—3; 1971: 17.

New record from Taiwan: 1 ♀, Taiwan C., Alisan, 2400 m, 3—9 July 1972, T. C. Maa (BISH).

***Psen (Psen) orientalis* Cameron**

Cameron, 1890: 269 (Madras, India); 1902: 289 (*Psen reticulatus*; India).

Van Lith, 1965: 42—44; 1968: 120—121.

New record from Kashmir: 1 ♀, Gulmarg, summer 1913, F. W. Thomson (BM).

***Psen (Psen) politiventris politiventris* Rohwer**

Rohwer, 1921: 321 (*Psen (Mimesa) politiventris*; Luzon).

Van Lith, 1959: 36—37 (*Psen (Psen) politiventris*); 1965: 48.

New records from Luzon: Mountain Prov., Abatan, Buguias, 60 km S. of Bontoc, 1800—2000 m, 1 ♂, 27 May 1964, 1 ♀, 15 June 1964, H. M. Torrevillas (BISH).

***Psen (Psen) alishanus* Tsuneki**

Tsuneki, 1967: 3—5 (Taiwan); 1971: 1, 17.

New records from Taiwan: 2 ♀, Taiwan C., Alisan, 2400 m, 3—9 July 1972, T. C. Maa (BISH).

***Psen (Psen) refractus meridianus* Van Lith**

Van Lith, 1965: 51—52 (S. India).

New record from South India: 1 ♀, Anamalai Hills, Cinchona, 3500 ft, May 1969, P. S. Nathan (MA).

***Psen (Psen) aureohirtus aureohirtus* Rohwer**

Rohwer, 1921: 322—323 (*Psen (Mimesa) aureohirta*; Philippine Is.).

Van Lith, 1959: 49—50 (*Psen (Psen) aureohirtus*); 1965: 56; 1968: 121.

New record from Luzon: 1 ♀, Mountain Prov., Abatan, Buguias, 60 km S. of Bontoc, 1800—2000 m, 9 May 1964, H. M. Torrevillas (BISH).

***Psen (Psen) ruficrus* Van Lith**

Van Lith, 1965: 62—63 (New Guinea); 1968: 122—124.

New records from NE. New Guinea: 30 km E. of Goroka, 2000—2100 m, 1 ♀, 15—21 April 1968, 1 ♂, 22—31 May 1968, J. and M. Sedlacek (BISH).

***Psen (Psen) sedlaceki* Van Lith**

Van Lith, 1968: 124—125 (New Guinea).

New record from NE. New Guinea: 1 ♂, Morobe District, Ulap, 800—1100 m, Sept. 1968, N. L. H. Krauss (BISH). This is the second male recorded, the female is still unknown.

***Psen (Psen) inflatus* Van Lith**

Van Lith, 1968: 129—130, ♀ (*Psen (Mimesa?) inflatus*; Central New Guinea).

New records: NE. New Guinea, Wau, 1 ♂, Jan. 1970, 1 ♀, 2100–2300 m, 3 Aug. 1971, Sedlacek (BISH); 2 ♂, Wau, 2100—2360 m, Mt. Kaindi, 14 Sept. 1972, J. van der Vecht (ML).

Female. — Somewhat darker than the form from Central New Guinea. Head, scutum and mesopleura including hypo-epimeral area black, with indistinct bluish-black shine, propodeum with steel-blue or violet-blue reflections. Dorsum and ventral plate of petiole black, sides and underside of petiole dark reddish-brown. Gaster black with metallic-blue shine, apex reddish-brown. Femora with light metallic shine, hind tibiae dorsally dark brown, reddish-brown below. Apical third of fore wings infusate. Interantennal tooth blunt in dorsal aspect, as in the females from Central New Guinea. Petiole about ten times as long as wide in the middle, in dorsal aspect.

First description of male. — Resembling female. Scape and following segment of antennae and basal half of underside of flagellum reddish. In two of the males the epicnemium has a violet-blue metallic shine, in one of these two males the mesopleura including hypo-epimeral area with the same shine. The male caught in January has a completely brownish-black petiole, in the two other males the petiole is reddish-brown with dark dorsal line.

Antennae long, third segment about four times, segments 4—6 over 2½ times, segments 7—10 about 2½ times, segments 11–12 over twice as long as broad at apex, segment 13 over 2½ times as long as broad at base. No tyloidea. Gastral sternites 3—4 with long, dark brown fasciculate hairs in middle of hind margin. Genitalia (Fig. 6—8) long, brownish-yellow, inner apex of stipes with long and broad membranous extension or flag.

Because of the characteristic fasciculate hairs on sternites 3—4 of the male and the structure of the genitalia this species has now been placed in the subgenus *Psen*, although the epicnemial region in some respects more resembles that of *Mimumesa*. The cone-shaped, laterally extending hypo-epimeral areas and the high transverse carinae on the ventral side of the thorax distinguish this form from any other species of *Psen* s.l.

The specimens from NE. New Guinea differ from the two females from Central New Guinea mainly in the metallic shine of the propodeum not being bronze or brassy, but steel-blue or violet-blue. There are no distinct structural differences. The north-eastern form may represent a different subspecies. The metallic reflection varying in intensity and also the colour of the petiole being variable in the males, a decision must be postponed until more material, especially from Central New Guinea, is available.

***Psen* (?*Psen*) *anodontotus* sp. nov.**

Female (holotype). — Head and thorax shining black, sides and back of thorax with some steel-blue shine. Labrum and median part of mandibles dark reddish, palpi pale brown, pronotal tubercles dark brown, tegulae reddish-brown. Apex of scape of antennae below and flagellum below brownish. Femora dark brown, reddish on foreside, also fore trochanters reddish. All tibiae and tarsi reddish, except fore and mid basitarsi which are pale yellowish. Petiole black, apex dorsally and ventral plate and rest of gaster reddish. Veins of wings black.

Frons impunctate and shining, on both sides of median carina somewhat convex; vertex shining with a few punctures. Back of head more densely punctate. Frontal carina very slightly broadening downwards, not ending in a tooth between antennae. Clypeus densely finely punctate, apical margin shining, very slightly emarginate, almost blunt, basal half of disk convex. Occipital carina below rather high, ending normally in hypostomal carina. Scape long and slender, about five times as long as broad, flagellum clavate, third segment about $3\frac{1}{2}$ times, fourth segment about twice as long as broad at apex, following segments gradually thickening, segments 8—11 as long as broad or slightly less, segment 12 about $1\frac{1}{2}$ times as long as broad at base. Mandibles bidentate at apex.

Dorsum of pronotum narrow, lateral corners sharp. Scutum and scutellum shining, sparsely but distinctly punctate, metanotum finely punctate. Dorsal and hind part of propodeum forming a distinct angle. Enclosed area of propodeum triangular, median two longitudinal carinae much diverging, lateral parts with only a few oblique carinae. Behind propodeal enclosure a broad smooth and shining area, back of propodeum with coarse reticulate carination, sides almost smooth. Metapleura shining. Mesopleura and mesosternum shining with a few fine punctures. Hypo-epimeral area strongly convex, smooth and shining. Anterior oblique suture foveolate, surface of anterior plate dull. Interepicnemial area roundly depressed, depression margined laterally by a distinct carina, which continues into the inner carina of the epicnemial areas; at the junction of these carinae a short backwards bent carina defining inner third of lower part of epicnemial area. Outer epicnemial carina slightly bent backwards, epicnemial areas not closed below. Acetabular carina a little behind the carina margining the interepicnemial area, slightly longer than half the distance between outer epicnemial carinae. Behind acetabular carina a few weak transverse carinae, median mesosternal carina distinct, ending before apex. Metasternum emarginate (angle about 135 degrees), with transparent margin. Legs rather thick. Upper two-thirds of back of hind femora smooth and shining, separated from lower part,

which bears a few hairs, by a narrow dull stripe consisting of very fine punctures, each bearing a short fine hair. Second recurrent vein of fore wings ending just in third submarginal cell.

Petiole cylindrical, slender, about $1\frac{1}{2}$ times as long as first tergite, dorsally smooth. Gaster shining, hardly punctate, broad hind margins of tergites smooth, impunctate. Pygidial area (Fig. 9) shining, elongate-triangular, apex rounded, lateral carinae distinct but short, along margin a few punctures.

Head and thorax whitish pubescent, pubescence on clypeus silvery, mostly short and appressed, near apex of clypeus a few long stiff yellowish hairs. Tempora somewhat appressed whitish pubescent. Petiole ventro-laterally with fine and long, obliquely downward directed hairs. Pubescence of legs yellowish-golden, on gaster sparse, denser on sixth sternite.

Length about 7.5 mm.

Male unknown.

East New Guinea: 1 ♀, holotype, Wau, 1500 m, McAdam Park, on *Hibiscus* flowers, 17 Sept. 1972, Mrs. E. van der Vecht (ML).

P. anodontotus differs from the other species of the subgenus *Psen*, where it is provisionally placed, in having short, clavate antennae, in the interepicnemial area which is depressed and margined below by a fine rounded carina in front of the acetabular carina, and by the inner carinae of the epicnemial areas. The inter-antennal carina does not end in a sharp tooth or elevated area, as is usual in the subgenus *Psen*. The structure of the epicnemial region is similar to that of the palaearctic species of the subgenus *Mimumesa* Malloch. The petiole differs, however, in being cylindrical instead of carinate.

Subgenus *Mimumesa* Malloch

Psen (*Mimumesa*) *oresterus* sp. nov.

Female. — Length about 6.5 mm. Rather resembling the palaearctic *P. littoralis* (Bondroit). Apical three antennal segments pale brown, rest of underside of antennae dark brown. Tarsi brown, tarsal segments 2—5 of fore legs pale brown.

Punctuation of head between ocelli and oculi as in *P. littoralis*, vertex with some fine transverse striation. Scutum shining, distinctly finely punctate, hind margin with short longitudinal striae; scutellum punctate, posteriorly hardly striate. Metanotum dull. Central area of propodeal enclosure without median longitudinal carina (holotype) or with irregular median longitudinal carina (paratype). Pygidial area (Fig. 10) as in *P. littoralis*.

Male. — Same size. Rather resembling *P. unicolor* Van der Linden, but vertex not densely punctate. Antennae brown below, apical three segments paler. All tarsi and apex of fore tibiae pale brown.

Antennal segments 4—12 with linear tyloidea, tyloides on segment 12 about $\frac{2}{3}$ of total length of segment and situated on basal half. Scutellum posteriorly slightly striato-punctate. Central area of propodeal enclosure with median longitudinal carina. Genitalia: Fig. 11, 12.

West Pakistan: Quetta, Baluchistan, 2 ♀, holotype and paratype, 1 ♂, allotype, June 1902, 1 ♂, paratype, Aug. 1903, C. G. Nurse (BM).

The last mentioned male has a deformed petiole, with apex about half as broad as propodeum and about twice as long as it is wide at apex.

Subgenus *Mimumesa*?

Psen (*Mimumesa*?) *tridentatus tridentatus* Van Lith

Van Lith, 1959: 55—56 (Sumatra); 1965: 67 (Malaya).

First record from Vietnam: 1 ♀, 17 km S. of Dilinh, 1300 m, 6—13 Oct. 1960, C.M. Yoshimoto (BISH).

First record from Laos: 1 ♂, Vientiane Prov., Ban Van Eue, 29 March 1966, native collector (BISH).

The genitalia of this male agree with those of a male of *P. tridentatus chrysomallus* from Burma. Basiparameres and parameres chestnut brown, valves of aedeagus (Fig. 15) yellowish-brown, volsellae dark brown. Basiparameres and parameres (Fig. 13, 14) heavily built, parameres thick, inner margin with fringe of stiff hairs.

The subgeneric position of *P. tridentatus*, *P. auratus* and *P. multipunctatus* is still uncertain. Their genitalia are very similar to those of *Mimumesa*, in which subgenus they were originally placed, but they are much heavier. They are much different from the genitalia of the subgenera *Psen*, *Punctipsen* and *Pseneo*. The petiole is remarkable because of the structure of the dorsal side. It has an irregular apical groove and large lateral punctures prolonged into short grooves. The propodeum is conspicuously longitudinally striate. The acetabular carina is complete, as in *Mimumesa* and *Pseneo*. In *P. tridentatus* the clypeal margin is more or less tridentate. Although in *Pseneo* the acetabular carina, clypeal margin and pygidial area are very similar and the sternal apical tufts are equally lacking in the

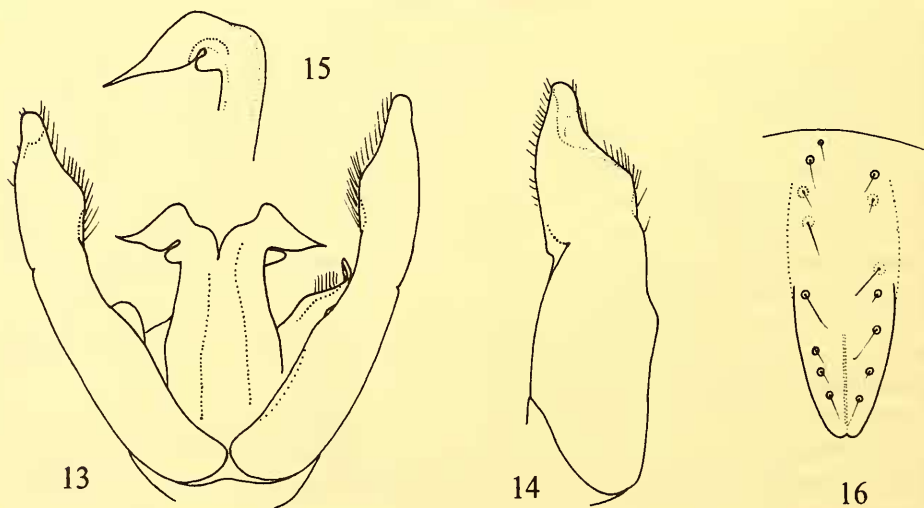


Fig. 13—15. *Psen tridentatus tridentatus* Van Lith, ♂, 13—14, genitalia in dorsal and lateral aspect; 15, penis valve. Fig. 16. *Psen tridentatus chrysomallus* Van Lith, ♀, pygidial area

males, I do not believe that *P. tridentatus* should be considered to belong to this genus. Probably a new subgenus should be erected for the three species in question. This subgenus would mainly be characterized by the structure of propodeum and petiole, the complete acetabular carina and the lack of sternal tufts. I hope to return to this problem later.

***Psen (Mimumesa?) tridentatus chrysomallus* Van Lith**

Van Lith, 1965: 68, ♂ (Burma).

Fortunately also the female of this subspecies has turned up. It was collected a few days earlier than the two males described in 1965, at the same locality.

It resembles the female of the nominate form, but is distinguished by the larger size, the paler base of the antennae and the stronger sculpture of scutum and propodeum.

Anterior margin of clypeus as in male (Van Lith, 1965: Fig. 77). Frons below median ocellus with two small low tubercles, each at a distance from median ocellus and from median frontal carina about as large as diameter of ocellus. A slightly raised elongate smooth area along oculi. Vertex not densely, partly very finely, punctate. Third antennal segment in frontal view about four times as long as broad at apex, following two segments about twice, sixth segment about $1\frac{1}{2}$ times as long as broad, segments gradually diminishing in length, segment 11 about as long as broad at apex and last segment about $1\frac{1}{2}$ times as long as broad at base.

Scutum more closely punctate than in nominate form, especially in the middle of the scutum, with only a few small interstices between the punctures. In the nominate form the smooth spaces between the punctures are much larger in the middle of the scutum, about four or five times as large as diameter of punctures. Anterior margin of scutum much finer punctate in both forms, but in the female from Burma distinctly finer than in the nominate form. Enclosed area of propodeum not depressed, behind this area the number of longitudinal carinae is greater than in the nominate form, as a consequence the smooth areas in the antero-lateral corners of the back of the propodeum are smaller. Punctuation of tergites fine and rather dense, interstices on apical half about three or four times as large as punctures, interstices on margin of tergites 4—5 larger. The fine punctures on the fifth tergite are intermixed with a few larger punctures, it has a broad smooth margin. Petiole as in nominate form. Pygidial area also similar, lateral keels high, apex with small emargination, apically an indistinct median longitudinal keel (Fig. 16).

Face with dense, appressed silvery pubescence and also with long silvery hairs. Pubescence of gaster paler than in male. Apical margin of first two tergites with a row of long, sideways directed, pale golden hairs. The hairs should be examined from above, because they may appear to be much darker when seen from aside. Apical margin of first two tergites laterally and margins of tergites 3—4 with long whitish hairs, also pubescence on disk of all tergites very pale.

Length about 13 mm.

Upper Burma: 1 ♀, Nam Tamai Valley, 3000 ft, lat: N 27°42', long. E 97°54', 12 Aug. 1938, R. Kaulback (BM).

***Psen (Mimumesa?) multipunctatus* Van Lith**

Van Lith, 1959: 55 (Negros); 1965: 68 (*Psen (Mimumesa) auratus multipunctatus*; Luzon).

New record from Negros: 1 ♀, Negros Or., L. Balisabayao, 1—7 Oct. 1959, L. W. Quate (BISH).

New record from Luzon: 1 ♀, Mount Prov., Ifugao, Mayoyao, 1000—1500 m, 11 July 1966, H. M. Torrevillas (BISH).

Because of the strong punctuation of the gaster this form is now recognized as a distinct species. The male is still unknown.

***Psenulus Kohl*
Psenulus bicinctus Turner**

Turner, 1912b: 363—364 (Assam).

Van Lith, 1972: 159—160 (Assam, Sikkim, Nepal).

First record from Burma: 4 ♂, NE. Burma, Kambaiti, 7000 ft, 1 May 1934, R. Malaise (BM).

Apparently the colour of the gaster is somewhat variable. In two of the males the first tergite is reddish, the two other males have this tergite largely brownish or blackish. Third tergite with dark brown median area only, fourth tergite dark brown with reddish apical margin.

Petiole nearly twice as long as first tergite, longer than in the female, where it is at most 1½ times as long as first tergite.

Genitalia (Fig. 17) pale yellowish-brown, parameres deeply emarginate on inner side, a triangular tooth on apex of inner side of basiparameres.

***Psenulus orinus* Van Lith**

Van Lith, 1973: 131—133 (Nepal).

New record from Nepal: 1 ♀, Bokaihunde, 20 km N. of Trisuli (Nawakot), 2100 m, 13—17 Nov. 1965, L. W. Quate (BISH).

The genitalia closely resemble those of the preceding species. Both species are placed in the group of *Psenulus rufobalteatus* Cameron. The genitalia of *rufobalteatus* have not yet been examined.

***Psenulus major* sp. nov.**

Male. — Length about 10—10.75 mm. Black, with bluish shine. Base of flagellum below, base of mandibles, labrum, palpi and fore tibiae and tarsi reddish-brown; mid tarsi, base of hind tibiae, tegulae, apex of petiole and sides of first tergite brown. Wings distinctly fuscate, veins brown.

Interantennal carina sharp, ending below antennae in a low transverse carina. Clypeus shining, densely superficially punctate, anterior margin with deep, almost triangular emargination and short lateral teeth. Frons densely minutely punctate, vertex shining, sparsely finely punctate, tempora densely very finely punctate.

Antennae long, segments rounded below, about twice as long as broad at apex or $1\frac{1}{2}$ times as long as broad in the middle. Segments 4—12 with narrow tyloidea, on most segments almost as long as segment, indistinct carina on segment 3. Occipital carina ending in hypostomal carina.

Lateral corners of pronotum obtuse. Scutum shining, distinctly punctate, interstices up to a few times size of punctures, sometimes in rows, punctures much finer and sparser on outer side of subpleural sutures. Prescutal sutures distinct, reaching hind margin. Scutellum shining, distinctly punctate, much sparser on anterior half. Enclosed area of propodeum triangular, shining; central area wide, with indistinct median carina, in lower part with a few transverse arched carinae. Back of propodeum coarsely reticulate, carinae almost parallel on upper part, horizontal part behind enclosed area smooth and shining. Mesopleura, hypopleural area, mesosternum and anterior plate of mesepisternum shining, sparsely finely punctate. Anterior oblique suture foveolate, widened upper part with longitudinal carinae. Legs slender. Petiole almost cylindrical, about twice as long as first tergite, apex above with short, elongate-triangular groove. Gastral segments shining, densely finely punctate. Eighth gastral sternite with long spine.

Genitalia (Fig. 18) dark brown, parameres broad with rounded apex, apex of basiparameres on inner side with large triangular tooth.

Pubescence of face and frons greyish-brown, dense and short, with some longer hairs, laterally somewhat depressed but not on clypeal disk so that the sculpture is easily seen. Thorax and gaster brownish-grey pubescent, mesosternum whitish. Petiole latero-dorsally with a row of mostly short hairs, latero-ventrally with long erect hairs, ventral plate with dense short pubescence.

Laos: 1♂, holotype, Vientiane Prov., Ban Van Eue, 29 March 1966; 6♂, 15 March 1966, 3♂, 29 March 1966, 1♂, 30 March 1966, 1♂, 30 March 1967, all paratypes, same locality, some specimens collected in Malaise trap, native collectors (BISH).

The punctuation of the scutum varies somewhat and is in some paratypes finer and sparser than in the holotype.

P. major is easily distinguished from other black *Psenulus* by the narrow interantennal carina, the long and narrow tyloidea, large size and long petiole.

***Psenulus decipiens* sp. nov.**

Male (holotype). — Length about 8 mm. Head and thorax black. Mandibles except tips yellowish-red, palpi yellowish-brown. Scape of antennae and underside of flagellum yellowish-brown, flagellum dorsally brown. Pronotal tubercles brown. Legs including trochanters yellowish-red, fore and mid femora below somewhat brown. Gaster including petiole yellowish-red. Veins of wings dark brown.

Anterior margin of clypeus bidentate, distinctly emarginate. Interantennal carina narrow, ending below antennae in transverse carina. Frons and vertex sparsely finely punctate. Postocellar area not raised. Occipital carina ending before hypostomal carina. Antennae about as long as head and thorax together, segments rounded below, segment 3 about $2\frac{1}{2}$ times, segments 4—12 about twice

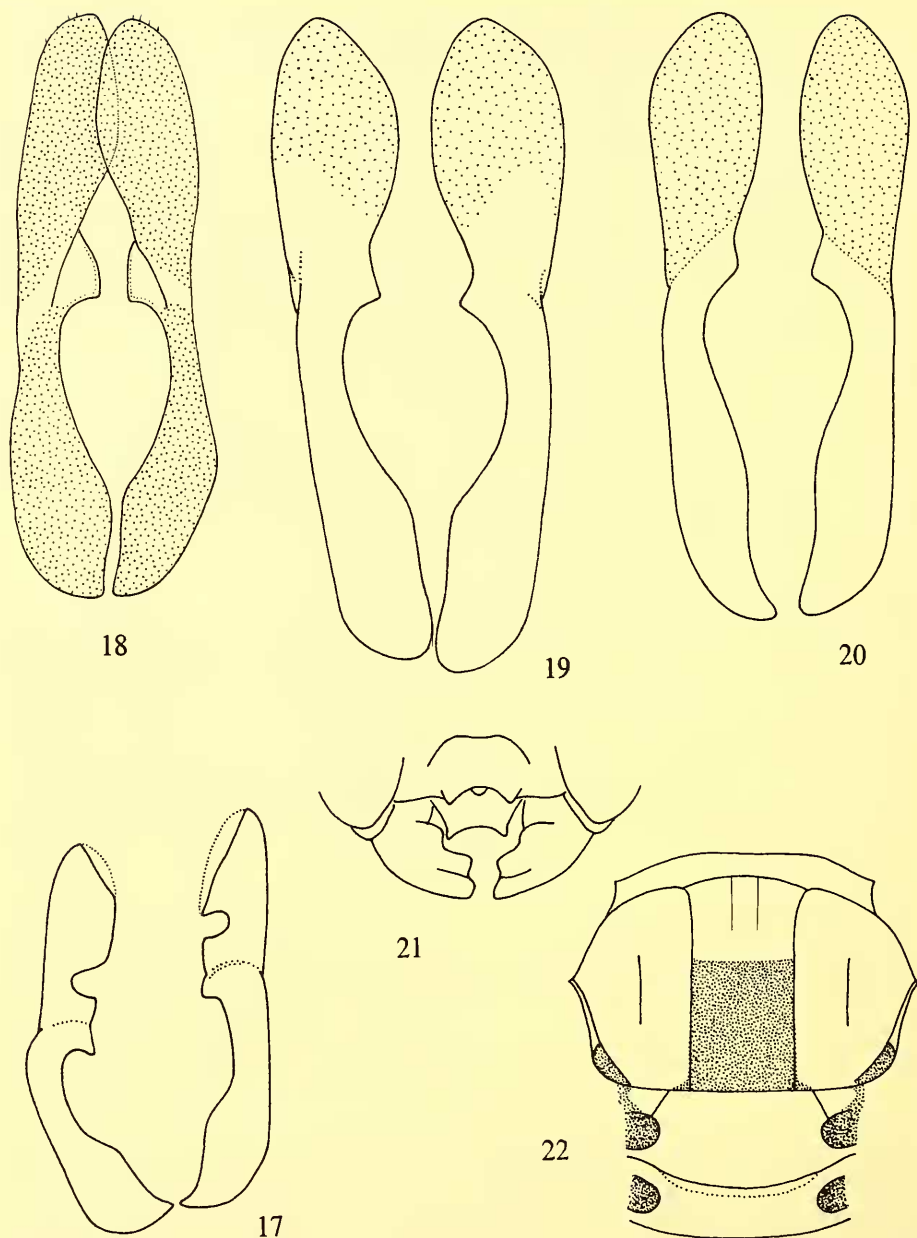


Fig. 17—20. Male basiparameres and parameres, dorsal aspect, of various species of *Psenulus*. 17, *P. bicinctus* Turner, Burma; 18, *P. major* sp. nov., paratype; 19, *P. decipiens* sp. nov., holotype; 20, *P. laosensis* sp. nov., paratype. Fig. 21—22. *Psenulus armipes* sp. nov., ♀, holotype, 21, face, lower part; 22, thorax, dorsal aspect

as long as broad at apex, last segment over $2\frac{1}{2}$ times as long as broad at base. No distinct tyloidea.

Pronotal corners rounded. Scutum shining, distinctly irregularly punctate, on anterior half weaker and more sparsely. Prescutal sutures as long as scutum, less distinct on posterior half. Scutellum and metanotum shining, sparsely punctate. Enclosed area of propodeum narrow, longitudinal groove narrow, back of propodeum shining, below and laterally irregularly carinate, also posterior half of sides. Mesopleura, hypo-epimeral area, anterior plate of mesepisternum and mesosternum shining, minutely punctate. Anterior oblique suture foveolate, widened upper part with a few oblique carinae. Legs slender. First recurrent vein of fore wings ending well before end of first submarginal cell. Petiole cylindrical, little longer than first tergite, apex with small triangular groove. Gastral tergites minutely sparsely punctate.

Pubescence of face and dorsal side of pronotum silvery, mostly appressed. Pubescence of rest of body yellowish-grey.

Genitalia (Fig. 19) resembling those of *P. laosensis*, basal part yellowish-brown, greater part of parameres dark brown, apex rounded, inner corner of basiparameres with low tooth.

Laos: 1♂, holotype, Vientiane Prov., Ban Van Eue, 15—31 May 1965, native collector (BISH).

P. decipiens seems to be closely related to *P. major* and *P. laosensis* but differs, besides in other characteristics, in the absence of distinct tyloidea.

***Psenulus laosensis* sp. nov.**

Male. — Length about 8 mm. Head and thorax black; mandibles except apices yellowish, palpi brownish-yellow, antennae dark brown, scape and basal half of underside of flagellum reddish-brown, pronotal tubercles yellowish-brown. Legs including trochanters and gaster including petiole yellowish-red. Veins of wings brown.

Anterior margin of clypeus bidentate, distinctly emarginate. Interantennal carina very slightly broadened dorsally, with fine groove, carina ending below antennae in transverse carina. Occipital carina ending before hypostomal carina. Frons and vertex minutely sparsely punctate. Postocellar area not raised. Antennae longer than head and thorax together, segments laterally somewhat flattened, underside rounded. Segment 3 in lateral view over twice, segments 4—10 about twice, segments 11—12 over twice as long as broad at apex, segment 13 nearly three times as long as broad at base. Segments 4—12 with oblique long narrow tyloidea, longest on median segments but not reaching base or apex.

Pronotal corners rounded. Scutum shining, minutely punctate, prescutal sutures distinct on anterior half, less distinct on posterior half. Scutellum and metanotum shining. Enclosed area of propodeum short triangular; upper part of back of propodeum shining, lower part and posterior part of sides reticulate, median longitudinal groove narrow. Mesopleura, hypo-epimeral area, anterior plate of mesepisternum and mesosternum shining, indistinctly punctate. Anterior oblique suture foveolate, widened upper part with a few oblique carinae. Legs slender.

First recurrent vein of fore wings ending in second submarginal cell. Petiole almost cylindrical, nearly $1\frac{1}{2}$ times as long as first tergite, a small triangular depression at apex. Gastral tergites minutely punctate.

Basal part of genitalia (Fig. 20) reddish-brown, parameres dark brown, broad with rounded apex, inner shoulder of basi-parameres with low tooth.

Pubescence of face and pronotum pale golden, mostly appressed, of rest of body yellowish-brown.

Laos: 1♂, holotype, Vientiane Prov., Ban Van Eue, 29 March 1966, native collector; 4♂, paratypes, same locality, 15—30 March 1966, one in Malaise trap, native collector (BISH).

P. laosensis is probably closely related to the entirely black *P. major*, perhaps also to *P. decipiens*.

***Psenulus armipes* sp. nov.**

Female (holotype). — Length about 8 mm. Head black; basal half of mandibles yellow, palpi straw-yellow. Scape of antennae yellowish, following segments dorsally brown, ventrally yellowish-brown. Thorax yellow, lower part of pronotum black, propleura dark brown. Posterior $\frac{3}{4}$ of area between prescutal sutures black, posterior corners of scutum black (Fig. 22). Metapleura and an adjacent mark on mesopleura brown, a brown streak on mesopleura below. Interepicnemial area and median longitudinal band on mesosternum brown. Enclosed area of propodeum, median longitudinal groove and narrow apical margin of propodeum black. Fore and mid legs including coxae yellow, hind legs yellowish-red, hind coxae yellowish. Petiole dark brown, ventral plate of petiole and gaster reddish.

Head thick. Frontal carina raised and widened between antennae, broadened part about twice as long as broad, ending below antennae in a short, arched, transverse carina. Clypeus flat, superficially finely punctate, median part of anterior margin raised, widely emarginate, lateral teeth large and protruding in lateral view. In frontal view a median tooth on a lower level is visible (Fig. 21). Frons shining, depressed medially. Vertex shining, finely punctate, a deep oblique groove along lateral ocelli. Occipital carina ending in hypostomal carina. Mandibles with tooth near upper base, apex bidentate, lower teeth blunt (worn off?). Fore margin of labium blunt, laterally with tooth. Antennae short, clavate, third segment about three times as long as broad at apex, following segments gradually decreasing in length, segments 9—11 about as long as broad at apex, last segment about $1\frac{1}{2}$ times as long as broad at base.

Pronotal angles with small tooth. Scutum shining, prescutal sutures sharp and narrow, reaching hind margin of scutum, apically slightly widened and deeper. Enclosed area of propodeum triangular with distinct median carina, lateral carinae oblique. Back of propodeum smooth, longitudinal groove narrow. Anterior oblique suture narrow, widened upper part smooth. Legs rather thick, base of hind tibiae flattened and with thin spine about twice as long as width of base of tibia. On outer side of hind tibiae a few stout reddish thorns. Petiole about $1\frac{1}{2}$ times as long as first tergite, cylindrical, flattened dorsally, base with lateral ridge. Pygidial area elongate-triangular, apex rounded.

Face with silvery, mostly appressed, pubescence, rest of body yellowish-grey pubescent, pubescence on mesosternum and sixth sternite more dense and golden. Petiole laterally with long erect hairs.

Male unknown.

Philippine Is.: 1 ♀, holotype, Misamis Or., Dinawihan Gingoog, 26 km E. of Gingoog City, 100–300 m, 15 August 1965, H.M. Torre Villas, Malaise trap (BISH).

P. armipes belongs to the group of *P. scutatus*. It differs from *P. scutatus* in colour as well as in the shape of the clypeal margin.

***Psenulus tectus* sp. nov.**

Female (holotype). — Length about 8.5 mm. Head black, margin of clypeus somewhat reddish transparent. Basal $\frac{3}{5}$ of mandibles yellow, apex dark reddish. Labrum reddish-brown. Palpi yellowish-brown. Scape of antennae yellow, apex brown on inner side; flagellum (missing after third antennal segment) brown above, yellowish-brown below. Thorax black, following parts yellow: dorsal side of pronotum, pronotal tubercles, broad line along lateral sides, posterior $\frac{2}{5}$ of interprescutal area, axillae, scutellum except a narrow brown mark along posterior margin, metanotum, propodeum except a broad black band above (with two lateral downward projections) and a narrow band at apex, anterior plate of mesepisternum, a vague large spot on mesopleura below, behind anterior oblique suture, a small spot below fore wings and a larger one below hind wings. Petiole yellowish-red, gaster pale red. Fore and mid legs yellow, back of femora more or less brown, hind legs yellowish-red with brown tarsi. Tegulae pale yellow, veins of wings brown.

Head large. Frontal carina raised, broadened and excavate between antennae, ending below antennae in a transverse carina (Fig. 23). This transverse carina is situated on a raised area which in dorsal view is protruding like a sloping roof (Fig. 25); in lateral view this area extends far beyond the surface of the clypeus (Fig. 24). Protruding median part of anterior margin of clypeus broad, indistinctly tridentate, disk of clypeus superficially punctate. Frons and vertex shining, almost impunctate, tempora slightly dull, finely punctate. Occipital carina ending in hypostomal carina. Apex of mandibles bidentate. Third antennal segment over three times as long as broad at apex.

Pronotal corners obtuse. Scutum finely aciculate, very finely and sparsely punctate. Prescutal sutures narrow, indistinctly foveolate, reaching hind margin. Scutellum and metanotum shining, almost impunctate. Enclosed area of propodeum triangular, median longitudinal groove on back of propodeum narrow, back laterally with shallow, finely transversely striate groove. Sides of propodeum, mesopleura and mesosternum shining, almost impunctate. Anterior oblique suture narrow, foveolate, upper part striate. Petiole cylindrical, nearly twice as long as first tergite, a short groove at apex. Pygidial area elongate-triangular, apex blunt (Fig. 26). Femora rather thick, base of hind tibiae with smooth narrow groove, margined on inner side by a narrow high carina, base also with long thin spine which is twice as long as width of base. First recurrent vein ending in first

submarginal cell, second recurrent vein in third submarginal cell.

Face with silvery, mostly appressed pubescence. Pubescence of rest of body yellowish-grey. Petiole dorso-laterally, laterally and ventrally with a row of long erect hairs.

Male unknown.

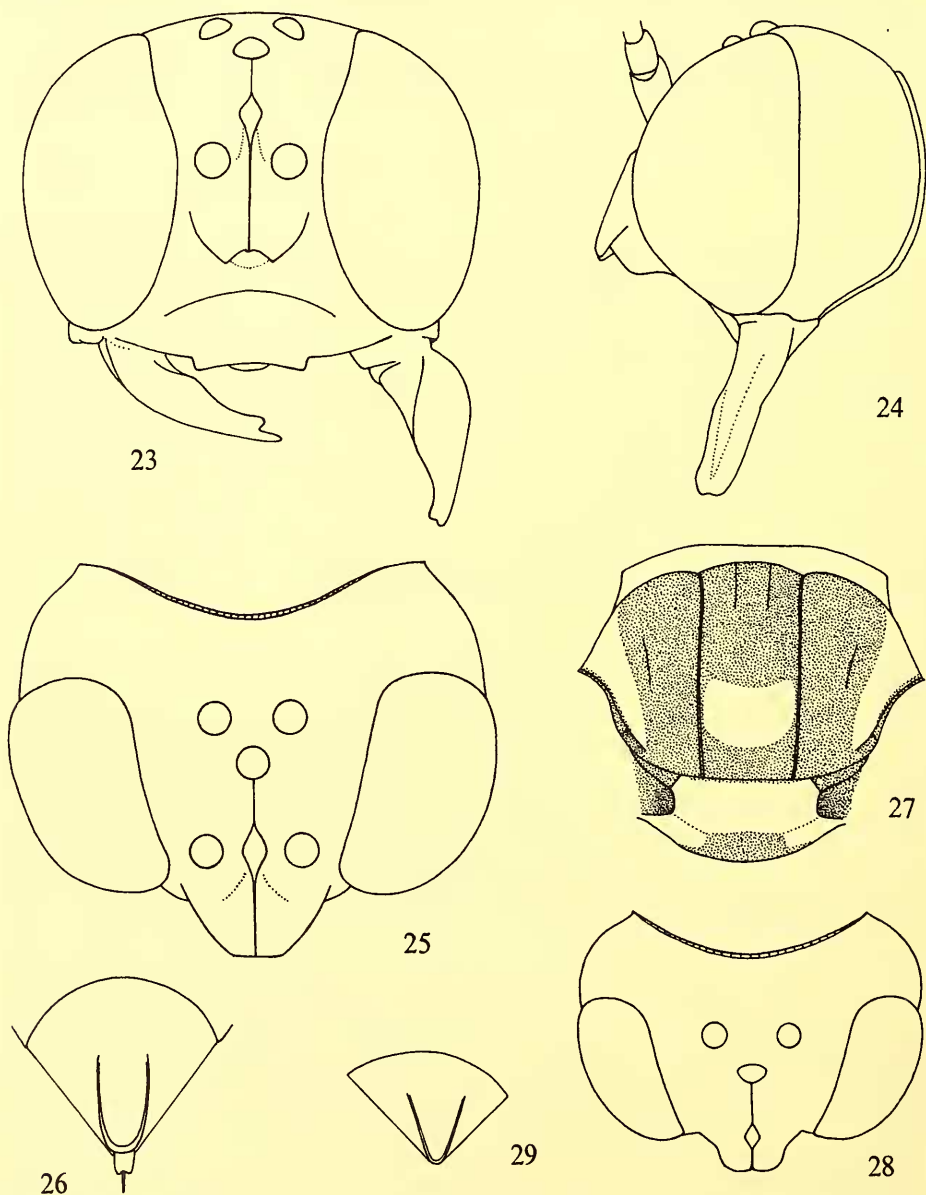


Fig. 23—26. *Psenus tectus* sp. nov., ♀, holotype, 23—25, head in frontal, lateral and dorsal aspect; 26, pygidial area. Fig. 27—29. *Psenus anomalus* sp. nov., ♀, holotype, 27, thorax; 28, head in dorsal aspect; 29, pygidial area

Laos: 1 ♀, holotype, Savannakhet Prov., Savannakhet, 15 April 1967, native collector (BISH).

P. tectus is one of the first two representatives on the Asiatic continent of the group of *Psenulus scutatus*, thus far known from the Philippine Islands, Borneo and Java. It is easily distinguished from the other species of this group by the roof-like protuberance below the antennae.

***Psenulus anomalus* sp. nov.**

Female (holotype). — Length about 6.5 mm. Head black; mandibles yellow with dark tips, palpi yellowish-brown. Dorsal half of scape brown on inner side, flagellum dorsally brown, yellowish below. Thorax (Fig. 27) black with following parts yellow: dorsal side of pronotum, pronotal tubercles, lateral margins of scutum, a large mark between prescutal sutures near hind margin, scutellum except a narrow brown mark along posterior margin, a very small spot on axillae, metanotum except narrow brown hind margin, back of propodeum except broad basal band and narrower apical margin (sides of propodeum black), upper third of anterior plate of mesepisternum. Fore and mid legs yellow, underside of fore femora brown, hind legs reddish. Petiole black, rest of gaster including ventral plate reddish. Veins of wings brown.

Head large. Frontal carina raised and excavate between antennae, ending below antennae in a projecting short transverse carina (Fig. 28). Clypeus shining, indistinctly sculptured on surface. Anterior margin of clypeus somewhat emarginate, left part deformed in the type, probably with large, blunt median tooth. Frons and vertex smooth and shining. Tempora dull. Occipital carina ending in hypostomal carina. Antennae short, clavate, segments 11-12 nearly twice as broad as long. Mandibles with blunt apex.

Pronotal corners obtuse. Scutum very finely aciculate with some fine punctures. Prescutal sutures narrow, finely foveolate, reaching hind margin. Between prescutal sutures before hind margin a number of short rugae. Parapsidal sutures long. Scutellum and metanotum smooth and shining. Enclosed area of propodeum rather narrow, the small central area connected with fore margin by a short carina (petiolate). Back and sides of propodeum smooth, median sulcus narrow, between back surface and sides a narrow area of fine irregular carination. Mesopleura smooth and shining, mesosternum more distinctly punctate. Anterior oblique suture foveolate, also widened upper part. Legs rather thick, basal $\frac{2}{5}$ of hind tibiae with smooth groove, margined on inner side by a sharp carina, base of this groove with a narrow spine about twice as long as width of base. First recurrent vein of fore wings interstitial, second recurrent vein ending well in third submarginal cell.

Petiole almost cylindrical, nearly $1\frac{1}{2}$ times as long as first tergite, a small triangular depression at apex. First tergite longer than broad at apex. Gaster very finely aciculate, indistinctly punctate. Pygidial area (Fig. 29) triangular.

Pubescence of face and tempora silvery, mostly appressed. Pubescence of rest of body whitish, dense on mesosternum; epicnemial areas below with a small, densely pubescent spot. Petiole with long lateral and ventral erect hairs, dorso-laterally a row of fine short hairs, intermixed with a few long hairs.

Male unknown.

Vietnam: 1 ♀, holotype, 15—35 km NW. of Phan Rang, 8—16 Nov. 1960, C.M. Yoshimoto (BISH).

Although the clypeal margin is deformed, the other characteristics, especially the shape of the pygidial area justify the naming of this form as a distinct species. *P. anomalus* is the first representative of the group of *P. scutatus* in Vietnam and the second known species of this group on the Asiatic continent.

***Psenulus quadridentatus* Van Lith**

Van Lith, 1962: 37—38 (Malaya); 1972: 162 (Vietnam); 1973: 133 (Nepal).

New record from Malaya: 1 ♀, Pahang, Cameron Highlands, 5000 ft, 29 April 1973, C.G. Roche (CGR).

***Psenulus chillcotti* Van Lith**

Van Lith, 1973: 133—136 (Nepal).

First record from Burma: 1 ♀, NE. Burma, Kambaiti, 7000 ft, 1 May 1934, R. Malaise (BM).

***Psenulus vaneuensis* sp. nov.**

Male (holotype). — Length 5—6 mm. Head black; labrum reddish, palpi yellowish-brown, flagellum of antennae dark brown, underside and scape reddish-brown. Thorax black, pronotal tubercles yellowish-red. Legs including trochanters and apex of coxae reddish, underside of fore and mid femora brown. Gaster including petiole red.

Clypeus convex, surface densely superficially punctate, anterior margin bidentate. Interantennal carina broadened, this part more than twice as long as wide, carina ending in a transverse carina below antennae. Frons and vertex shining, superficially finely punctate, tempora more densely punctate. Occipital carina ending in hypostomal carina. Antennae moniliform, segment 3 nearly twice as long as broad at apex, following segments gradually decreasing in length, segments 8—11 about as long as greatest width, segment 12 slightly longer than broad, segment 13 nearly twice as long as broad at base. Segments 3—12 with distinct, dark, oblong tyloidea, about twice as long as broad, small on segment 3.

Pronotal corners obtuse. Scutum shining, densely, mostly finely, punctate. Prescutal sutures foveolate, about as long as anterior $\frac{3}{4}$ of scutum. Scutellum shining, finely punctate. Metanotum dull, densely minutely punctate. Enclosed area of propodeum rather narrow, lateral parts with oblique carinae. Back of propodeum dorsally smooth and shining, declivous part finely punctate, apex with a few rugae, dorso-laterally a broad, coarsely foveolate groove. Posterior part of sides of propodeum irregularly carinate. Mesopleura shining, finely punctate, interstices a few times size of punctures. Hypo-epimeral area minutely punctate. Mesosternum densely finely punctate. Anterior oblique suture broad, foveolate, also widened upper part. Petiole thick, about as long as first tergite, dorsally

convex, ventrally keeled, sides somewhat depressed. Gaster shining, minutely punctate.

Genitalia (Fig. 30) yellowish-brown, apex of basiparameres on inner side projecting as a low tooth, apex of parameres rounded.

Pubescence greyish-white.

Female unknown.

Laos: 1 ♂, holotype, Vientiane Prov., Ban Van Eue, 15 May 1966, native collector (BISH).

P. vaneuensis seems to be closely related to *P. chillcotti*, which also belongs to the group of *P. quadridentatus*. The genitalia, however, are different (cf. Van Lith, 1973).

***Psenulus puncticeps* (Cameron)**

Cameron, 1907: 91 (*Psen puncticeps*; India).

Rohwer, 1923: 595—596 (*Diodontus antennatus*; Singapore).

Van Lith, 1962: 44—46 (*Psenulus antennatus*; Malaya, Java, Bali); 1973: 136—137 (*Psenulus puncticeps*; Nepal).

First records from Laos: 1 ♀, Sayaboury Prov., Sayaboury, 17 Febr. 1965, native collector, 1 ♀, Vientiane Prov., Ban Van Eue, 750 m, forest streambed, 10—11 April 1965, J.L. Gressitt, Malaise trap (BISH).

In these females the pronotal tubercles are yellowish, the petiole is reddish-brown or dark brown, with reddish apex and ventral plate.

First record from Flores: 1 ♀, C. Flores, Moni, Wolowaru, 11 Nov. 1949, Bühler and Sutter (NMB).

This female is rather dark. Pronotal tubercles blackish-brown on fore part, yellowish-brown behind. First tergite almost entirely black, also petiole with ventral plate. Apical $\frac{2}{3}$ of hind tibiae brownish-black, mid tibiae slightly brownish.

Genitalia of a male from Malang, Java: Fig. 31, 32.

***Psenulus puncticeps rufipes* subsp. nov.**

A male from West Sumba much resembles the males of the nominate form from Java and Bali. It differs in having the hind legs including trochanters completely reddish and there is no yellowish ring on the base of the hind tibiae. Fore and mid legs yellowish-red, femora brownish below. Ventral plate of petiole and first tergite reddish. Posterior half of pronotal tubercles brownish.

Antennal segments less rounded than in the nominate form, segments 3—10 with small but distinct tyloidea. The males from Java and Bali have indistinct tyloidea on segment 4—9, which have not been mentioned earlier.

W. Sumba: 1 ♂, holotype, Pogobina, 16 Sept. 1949, Bühler and Sutter (NMB).

***Psenulus exiguus* sp. nov.**

Female (holotype). — Length about 6 mm. Head and thorax black, mandibles dark brown, palpi brown. Antennae dorsally dark brown, ventrally yellowish-

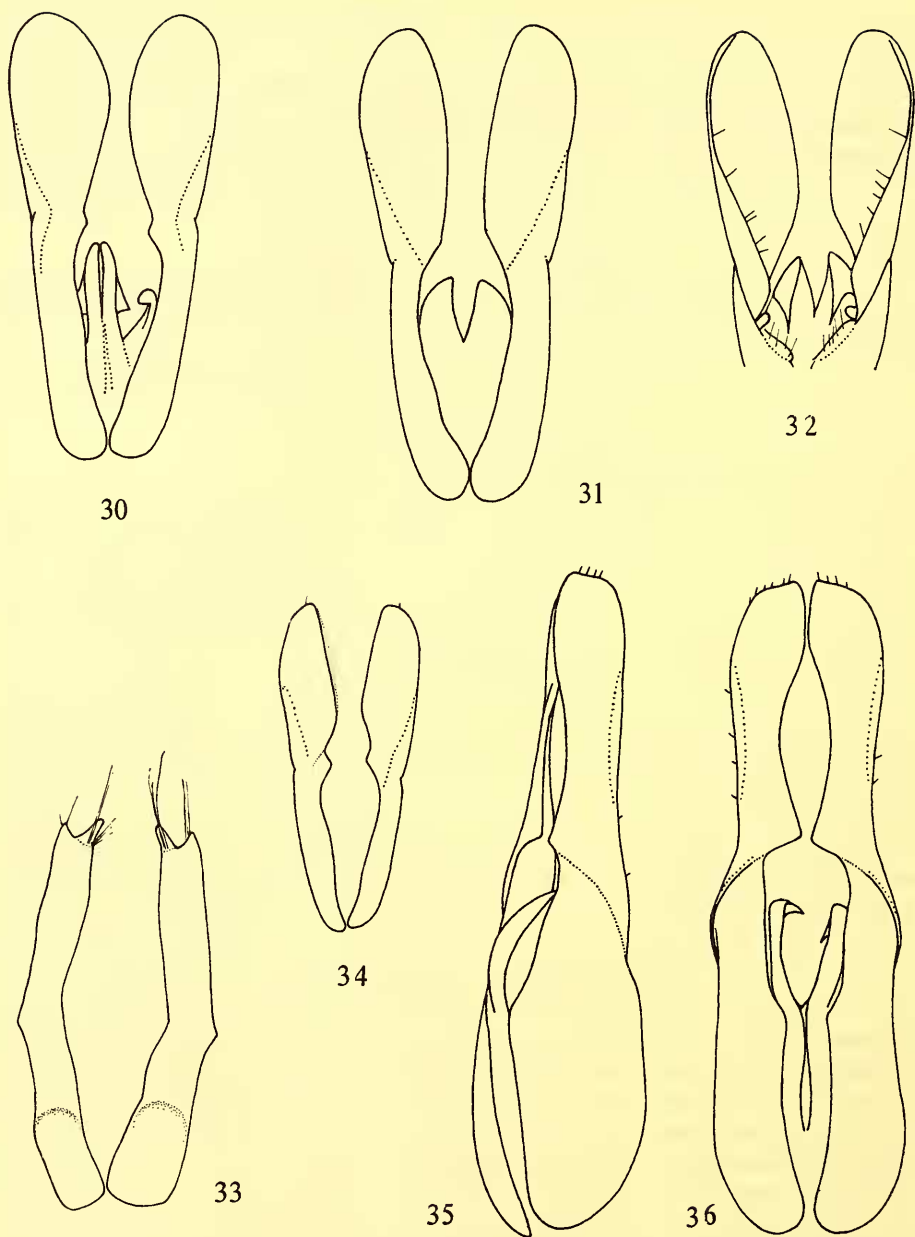


Fig. 30—36. Male genitalia of various species of *Psenulus*. 30, *P. vaneuensis* sp. nov., holotype, dorsal aspect; 31—32, *P. puncticeps* (Cameron), Java, dorsal and ventral aspect; 33, *P. crabroniformis wapiensis* subsp. nov., paratype; 34, *P. exiguus* sp. nov., paratype, Malaya; 35—36, *P. suturalis* sp. nov., holotype, lateral and dorsal aspect

brown. Pronotal tubercles brownish-yellow. Femora brown, tibiae and tarsi yellowish-brown. Petiole dark brown. Gaster dark reddish, first tergite and apical half of tergites 2—3 and base of fourth tergite blackish (irregular, discoloured?).

Raised part of interantennal carina broadened and excavate. No distinct transverse carina. Median part of clypeal margin with two small teeth. Frons and vertex shining, finely but distinctly, rather densely, punctate. Tempora finely striate. Occipital carina ending in hypostomal carina. Mandibles tridentate at apex. Antennae short, clavate, segments 6—10 shorter than broad at apex, last segment about $1\frac{1}{2}$ times as long as broad at base.

Pronotal corners obtuse. Scutum shining with some irregular, mostly fine, punctation. Prescutal sutures indicated on posterior part of scutum by a few irregular rows of punctures. Hind margin of scutum with short rugae. Enclosed area of propodeum narrow, central area and sulcus on back of propodeum rather wide, sulcus with some transverse carinae. Back of propodeum shining, laterally an irregularly carinate edge. Mesopleura shining, almost impunctate. Anterior oblique suture narrow, foveolate, widened upper part with a few transverse carinae. Legs normal. First recurrent vein of fore wings interstitial, second recurrent vein ending in third submarginal cell. Petiole subquadrate in cross-section, about $1\frac{1}{2}$ times as long as first tergite. First tergite about as long as broad at apex, tergites densely finely punctate. Pygidial area indistinct.

Pubescence of face, tempora and pronotum silvery, mostly appressed. Thorax whitish pubescent, mesosternum very densely so, also a small round patch on epinemial areas below. Gaster yellowish pubescent.

Male. — Resembling female. Length 6—6.5 mm. Tergites 1, 3 and following brown. Apical outer half of hind tibiae brown. Normal transverse carina below antennae. No distinct tyloidea. Back and dorsal part of propodeum with fine oblique striation.

Genitalia (Fig. 34) yellowish-brown, parameres largely transparent. Apex of basiparameres with inconspicuous small tooth, apex of parameres rounded.

Laos: 1♀, holotype and 1♂, allotype, Sayaboury Prov., Sayaboury, 13 April 1966, native collector (BISH).

Malaya: 1♂, paratype, Selangor, Ulu Langat, 300—390 m, 13 June 1958, T.C. Maa (BISH).

The male from Malaya is slightly different in colour. Petiole and first tergite, apical $\frac{2}{3}$ of tergite 2, apical half of tergite 3 and tergites 4—7 dark brown. Only back of propodeum with oblique striae.

P. exiguus belongs to the group of *P. puncticeps*. It differs from *P. puncticeps* which has been taken at the same locality in Laos, by the small size and the extension of the dark brown colour.

***Psenulus suturalis* sp. nov.**

Male (holotype). — Length about 8.5 mm. Head black; mandibles dark reddish, palpi brown. Antennae dark brown, reddish-brown below. Thorax black, hind margin of pronotal tubercles and tegulae reddish-brown. Foreside of fore and mid femora, whole fore and mid tibiae and tarsi and greater part of hind tibiae reddish-

brown, rest of legs brown. Veins of wings dark brown. Petiole black, gaster including ventral plate of petiole reddish.

Raised part of interantennal carina narrow, ending below antennae in a long transverse carina. Clypeus densely superficially punctate, anterior margin with two small teeth. Frons, vertex and tempora smooth and shining. Occipital carina ending in hypostomal carina. Antennae long, third segment more than twice as long as broad at apex, segments 4—12 about twice as long, segment 13 more than twice as long as broad at base. No tyloidea, segments 4—10 with indistinct tubercles.

Pronotal corners about rectangular. Scutum, scutellum and metanotum shining, sparsely finely punctate. Prescutal sutures almost reaching hind margin, broad, foveolate. Enclosed area of propodeum and sulcus on back of propodeum deep. Behind enclosed area of propodeum some indistinct longitudinal striation, back and sides of propodeum very coarsely reticulato-carinate. Mesopleura and mesosternum smooth and shining, sparsely minutely punctate. Anterior oblique suture broad and coarsely foveolate, also widened upper part. Legs normal, slender. First recurrent vein of fore wings ending in first submarginal cell, distance from second submarginal cell about $\frac{1}{3}$ of abscissa of radius in the second cell. Second recurrent vein ending in third submarginal cell. Petiole broad, widening towards apex, slightly longer than first tergite. Petiole dorsally with two parallel, broad, rounded carinae, laterally with deep groove, ventral side flattened. First tergite longer than broad at apex. Tergites shining, sparsely finely punctate.

Genitalia (Fig. 35, 36) long and narrow, reddish-brown, broadened part of parameres almost black. Parameres on inner side basally broadened into a large triangular tooth, parameres towards apex gradually broadening, apex with small tooth on inner side. Between basiparameres and parameres a high, rounded ridge on dorsal side.

Pubescence of face silvery-white, mostly appressed. Tempora with long whitish pubescence. Vertex and thorax with greyish-brown pubescence, dense on mesosternum. Gaster with yellowish-brown pubescence. Petiole dorso-laterally, laterally and ventrally with long erect hairs.

Female unknown.

Laos: 1 ♂, holotype, Vientiane Prov., Ban Van Eue, 15—31 May 1965, native collector (BISH).

P. suturalis is distinguished by the coarse and long prescutal sutures, the structure of the petiole and the genitalia. It does not fit well into any of the Indo-Australian species-groups described thus far.

***Psenulus erraticus basilanensis* (Rohwer)**

Rohwer, 1921: 318—319; 1923: 595 (*Diodontus basilanensis*; Basilan, Singapore).

Van Lith, 1962: 49—50 (*Psenulus erraticus basilanensis*); 1970: 95—96 (Tawi Tawi).

New record from Singapore: 1 ♂, University of Singapore, Campus, 8 May 1972 (US).

Pubescence of face silvery, of frons, thorax and gaster yellowish-golden (fresh

specimen), hairs long on metanotum. Petiole with lateral row of short hairs, sides with long hairs directed obliquely downwards.

This is the second known male of *P. basilanensis*. Both have been collected in Singapore.

***Psenulus crabroniformis crabroniformis* (Smith)**

Smith, 1858: 107 (*Mellinus crabroniformis*; Borneo).

Van Lith, 1962: 51—53 (*Psenulus crabroniformis*); 1972: 168—170 (Thailand).

Tsuneki, 1974: 637—638 (Malaya).

New record from Malaya: 1 ♀, Pahang, Genting Serpah, 2100 ft, 2 Dec. 1973, C. G. Roche (CGR).

New record from Thailand: 1 ♀, 50 km W. of Tak, 900 m, 7—8 April 1966, J. and M. Sedlacek (BISH).

First records from Laos: 6 ♀, Sayaboury Prov., Sayaboury, 12 Febr., 2 March and 13 April 1966, two in Malaise trap; 2 ♀, Vientiane Prov., Ban Van Eue, 29 March and 31 May, 1966, native collector (BISH).

The petiole is reddish, base somewhat paler. In the female from Pahang the sides of the petiole are slightly darkened apically. OOD : POD = 9 : 7 (OOD is distance between oculi and ocelli, POD is distance between posterior ocelli).

***Psenulus crabroniformis wapiensis* subsp. nov.**

Four males from Laos differ from the nominate form (cf. Van Lith, 1962) in the sculpture of the thorax. The punctures are strong, the interstices often smaller than the punctures; in two specimens there are short transverse rugae across the prescutal sutures. The mesopleura are distinctly punctate, interstices mostly larger than punctures. In one specimen (15 March 1967) the apical half of the petiole is dark brown.

Genitalia (Fig. 33) with slender parameres, deeply emarginate at apex and with some long hairs at apex.

Female unknown.

Laos: 2 ♂, holotype and paratype, Wapikhamthong Prov., Wapi, 30 March 1967, 2 ♂, paratypes, 15 March and 15 April 1967, same locality, native collector, light trap (BISH).

***Psenulus crabroniformis nathani* subsp. nov.**

Female (holotype). — Differs from the nominate form from Thailand and Malaya by the darker petiole (more than apical half black, base yellowish), the almost entirely black instead of reddish hind femora and the dorsally dark brown apical half of the hind tibiae.

Pubescence of face and tempora silvery-white, of vertex greyish-brown, of thorax greyish or whitish. OOD : POD = 9 : 7.

Male unknown.

South India: 1 ♀, holotype, Anamalai Hills, Cinchona, 3500 ft, May 1967, P.S. Nathan (MA).

***Psenulus crabroniformis sumatranus* (Ritsema)**

Ritsema, 1880: 225—226 (*Psen sumatranus*; Sumatra).

Van Lith, 1962: 53—54 (*Psenulus crabroniformis sumatranus*; Sumatra, Java).

New records from West Java: 1 ♀, Mt. Gedogan, Djampang Tengah, Oct. 1937, 1 ♀, Mt. Melang, Djampang Wetan, 3—7000 ft, Dec. 1937, 1 ♀, Mt. Malang, 3—4000 ft, K. M. Walsh (BM).

In the Javanese form OOD : POD appears to be 10.5: 7.

***Psenulus philippinensis philippinensis* (Rohwer)**

Rohwer, 1921: 317—318 (*Diodontus philippinensis*, Luzon).

Van Lith, 1962: 54—56 (*Psenulus philippinensis philippinensis*).

New record: 1 ♀, Philippine Is., Luzon, Mt. Limay, Baker (USNM).

Thus far the nominate form is restricted to Luzon, where in total nine females have been collected.

***Psenulus philippinensis dapitanensis* (Rohwer)**

Rohwer, 1923: 594—595 (*Diodontus dapitanensis*; Mindanao).

Van Lith, 1962: 56 (*Psenulus philippinensis dapitanensis*; Mindanao, Bohol).

New records from Philippine Is.: 1 ♀, Biliran, Baker (USNM); 1 ♂, Negros, Cuernos Mts, Baker (USNM).

First description of male. — Length about 8.5 mm. Resembling female. Face with golden pubescence. Pubescence of thorax golden-brown. Hind femora dorsally not brownish, as in the female from Biliran, but all legs entirely yellowish-red, also antennae except scape which is more yellowish, flagellum dorsally not brownish, as in female.

Antennal segments 3—10 about 1½ times, segments 11—12 about 1½ times as long as broad at apex, last segment twice as long as broad at base. No tyloidea. Scutum resembling that of nominate subspecies, but with tendency to transverse rugosity.

Genitalia (Fig. 37—38) slender, yellowish-brown. Parameres with small triangular flag about halfway inner side, apex with large tooth on inner corner and a few long hairs. A few bristles on underside of parameres near apex. Apex of seventh sternite with small triangular emargination. Apical margin of sixth sternite (Fig. 40) very finely serrate. Eighth sternite Fig. 39.

Notwithstanding the sculpture of the scutum I consider this male to belong to *dapitanensis*, mainly because of the blackish apical ⅓ of the petiole.

***Psenulus maculatus maculatus* Van Lith**

Van Lith, 1962: 61—62 (Malaya).

New record: 1 ♀, Singapore, Changi Beach, 7 July 1972 (US).

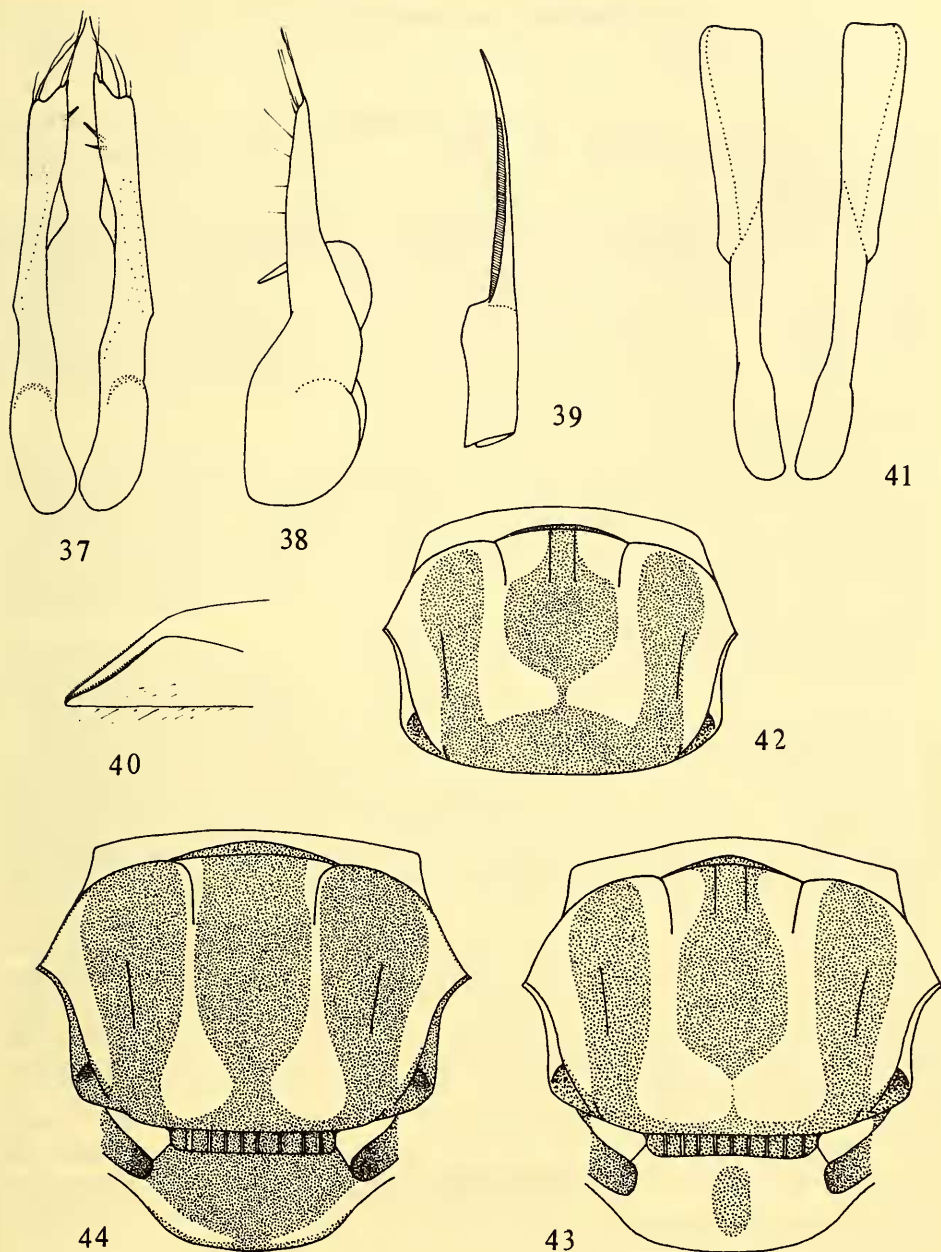


Fig. 37—40. *Psenulus philippinensis dapitanensis* (Rohwer), ♂, Negros, 37—38, genitalia, dorsal and lateral aspect; 39, 8th sternite, lateral aspect; 40, 6th sternite, lateral aspect. Fig. 41—42. *Psenulus trimaculatus* Van Lith, ♂, paratype, 41, basiparameres and parameres, dorsal aspect; 42, pronotum and scutum. Fig. 43. *Psenulus varius* Van Lith, ♀, thorax, dorsal aspect. Fig. 44. *Psenulus limbatus* sp. nov., ♀, holotype, thorax, dorsal aspect

***Psenulus trimaculatus* Van Lith**

Van Lith, 1962: 80—81 (Malaya).

New records: 3 ♂, Singapore, Bukit Timah Forest, 26 April 1973, D. H. Murphy (US); 1 ♂, Malaya, Kepong, 130—300 m, 13—21 March 1966, light trap, J. Sedlacek (BISH).

These males are darker than the holotype from Penang. The lateral marks on the scutum reach the black hind margin (Fig. 42), the median mark is connected with the hind margin by a narrow or indistinct line. Axillae black, with smaller or larger yellow spot. Third antennal segment over twice as long as broad in frontal view, segments 4—6 about twice, segments 7—10 about 1½ times, segments 11—12 about twice as long as broad at apex, last segment about 2½ times as long as broad at base. No tyloidea.

Genitalia (Fig. 41) straw-yellow, apex straight.

The marking of the scutum much resembles that of *P. peterseni* Van Lith, from the Philippine island Tawi-Tawi, of which only females are known. However, *peterseni* has the anterior plate of the mesepisternum largely yellow instead of entirely black, whilst the hypo-epimeral area is partly black, instead of entirely yellow as in the male of *P. trimaculatus*. Also the petiole of *P. peterseni* is different. Both species belong to the group of *P. sandakanensis*.

With regard to the three males from Singapore I received the following note from Dr. D. H. Murphy, Singapore: "Specimens of *Psenulus* reared from nests in vertical dead sapling in heavily shaded forest valley near small stream. Nests were in holes apparently made by larvae of *Therates dimidiatus* Dei. (Coleoptera: Cicindelidae) and several similar holes were still occupied by *Therates* larvae. Prey residues from one chamber were examined and contained recognisable fragments of Aphididae only, including siphons probably belonging to *Greenidoidea* sp. The forest belongs to "Tropical Moist Forest" (Holdridge classification). Nests were between 3 and 4 feet above ground level."

Dr. Murphy kindly also sent me one of the nests. It contains three empty cells, each about 8 mm long, diameter over 3 mm. The head end of the cells is closed by a brown lid, on the outer side with some fine white silk threads; the inner side is lined with a white layer which continues for about 1 cm on the sides. Between the first and second cell and between the second and third cell there is also a thin partition of macerated pith.

***Psenulus varius* Van Lith**

Van Lith, 1962: 69—70 (Malaya); 1972: 176—177.

New records: 5 ♀, Malaya, Penang, Tanjong Bungah, Sungei Kechil, 21—24 Jan. 1964, 1 ♀, Malaya, Penang, Penang Hills, Sungei Pinang, 16 May 1964, H. T. Pagden (BM).

There is some variation in the marking of the scutum (Fig. 43). In five of the six females the narrow line which connects the median mark with the hind margin is more or less indistinct, interrupted or even absent. The black mark of the

scutellum is either triangular or reduced to a median longitudinal mark.

The first recurrent vein of the fore wings is sometimes almost interstitial.

***Psenulus limbatus* sp. nov.**

Female (holotype). — Length about 8 mm. Head black; apical margin of clypeus and labrum reddish, mandibles except apices yellow, palpi yellowish. Scape of antennae and underside of segments 2 and 3 yellow, rest of underside of flagellum yellowish-red. Thorax black except the following parts. Dorsal side of pronotum and pronotal tubercles yellow. Scutum yellow with three broad black bands reaching fore and hind margin (Fig. 44). Axillae yellow, scutellum with yellow hind margin, interrupted in the middle. Metanotum, back of propodeum, upper $\frac{1}{3}$ of anterior plate of mesepisternum and a vague spot on mesopleura near foreside yellow. Fore and mid legs and hind coxae yellow, hind femora and tibiae yellowish-red with brownish outer side, hind tarsi brown. Gaster including petiole yellowish-red. Veins of wings brown.

Anterior margin of clypeus hardly emarginate, with two small teeth; distance between these teeth about $\frac{1}{5}$ of total distance there between the eyes. Interantennal carina dorsally sharp, ending below antennae in a transverse carina. Frons, vertex and tempora shining, almost impunctate. Postocellar area not raised. Occipital carina ending in hypostomal carina. Third antennal segment about $2\frac{1}{2}$ times, segments 4—6 about twice, segments 7—11 about $1\frac{1}{2}$ times as long as broad at apex, segment 12 about $2\frac{1}{2}$ times as long as broad at base.

Scutum, scutellum and metanotum shining, distinctly finely punctate. Enclosed area of propodeum triangular, dorsal part of pronotum shining, back and posterior half of sides of propodeum densely finely reticulate, median groove narrow. Mesopleura, hypo-epimeral area, anterior plate of mesepisternum and mesosternum shining, indistinctly punctate. Legs slender. First recurrent vein of fore wings interstitial. Petiole cylindrical, little longer than first tergite. Pygidial area long and narrow, apically with almost parallel carinae.

Pubescence of face silvery, mostly appressed, of rest of body whitish.

Laos: 1 ♀, holotype, Vientiane Prov., Gi Sion Vill., de Tha Ngone, 21—28 Febr. 1966, native collector (BISH).

Because of the transverse carina below the antennae *P. limbatus* has been placed in the group of *P. esuchus*. It resembles somewhat the male of *P. fyanensis* from Vietnam and Laos. However, fore and mid femora and tibiae are entirely yellow, the anterior plate of the mesepisternum is more distinctly yellow, and the propodeum is less dark. Certainty regarding the status of these two forms can be obtained only when the opposite sexes are found.

***Psenulus impressus* sp. nov.**

Male. — Length about 6 mm. Head black; mandibles yellow except dark tips, palpi pale yellow. Scape of antennae yellow, flagellum yellowish-brown below, dark brown above. Thorax yellow with narrow black mark along hind margin of scutum, this mark anteriorly roundly extended. Black parts: posterior corners of

scutum, anterior and lateral depressed parts of scutellum, enclosed area of propodeum and median longitudinal sulcus on back of propodeum, a small mark below fore wings, interepicnemial area and a narrow median line on mesosternum. Fore and mid legs including coxae and hind coxae yellow, rest of hind legs reddish-yellow, gaster including petiole reddish, apical spine brown. Veins of wings dark brown.

Clypeus superficially punctate, margin depressed, slightly triangularly emarginate, two short triangular teeth. Raised part of interantennal carina narrow, ending below antennae in a transverse carina. Frons and vertex shining, with very fine and dense, hairbearing punctation. Interocellar area much raised, bare and shining. Upper part of back of head sloping obliquely downward from hind margin of posterior ocelli to occipital carina. Occipital carina ending in hypostomal carina. Antennae long and slender, segments 3—12 about twice as long as broad at apex, last segment about $2\frac{1}{4}$ times as long as broad at base. No tyloidea.

Pronotal corners obtuse. Scutum with large superficial punctures, interstices mostly smaller than punctures. Prescutal sutures distinct on anterior half of scutum. Area around median scutal lines and parapsidal sutures impressed, which is best seen in anterior aspect. Scutellum and metanotum sparsely superficially punctate. Propodeal enclosed area with large central hexagonal area, lateral parts with few oblique carinae. Back of propodeum coarsely reticulato-carinate, upper part finely obliquely striate. Anterior oblique suture narrow, foveolate, widened upper part smooth. Legs slender. First recurrent vein of fore wings ending in second submarginal cell, nearly interstitial, second recurrent vein ending in third submarginal cell. Petiole cylindrical, longer than first tergite, gaster slender.

Pubescence on face, tempora and frons silvery, mostly appressed on clypeus, on ventral side of thorax dense, whitish, on rest of head and body yellowish-grey or yellowish-golden.

Genitalia (Fig. 46) small, pale brownish-yellow. Parameres dark brown, largely transparent, apex blunt.

Female unknown.

Philippine Is.: 1 ♂, holotype, Mt. Montalban, Rizal, Wa-wa Dam, 150—200 m, 2 March 1965, L. M. Torre Villas, 2 ♂, paratypes, same locality, 3 and 14 March 1965, H. M. and L. M. Torre Villas (BISH).

***Psenulus interstitialis interstitialis* Cameron**

Cameron, 1906: 222—223 (*Psenulus? interstitialis*; New Guinea).

Van Lith, 1962: 84—86 (*Psenulus interstitialis interstitialis*); 1972: 182—184 (New Guinea, Papua).

As stated earlier (Van Lith, 1972), this is a variable form which is also shown by the undermentioned specimens.

Lower half of anterior part of pronotum usually black, in some specimens entirely yellow. Scutum entirely yellow or with central square black mark. Antennal flagellum sometimes completely yellowish-red, usually dorsally more or less darkened. There does not seem to be any correlation between the varieties and their collecting localities; males from Mamai Plantation have either an

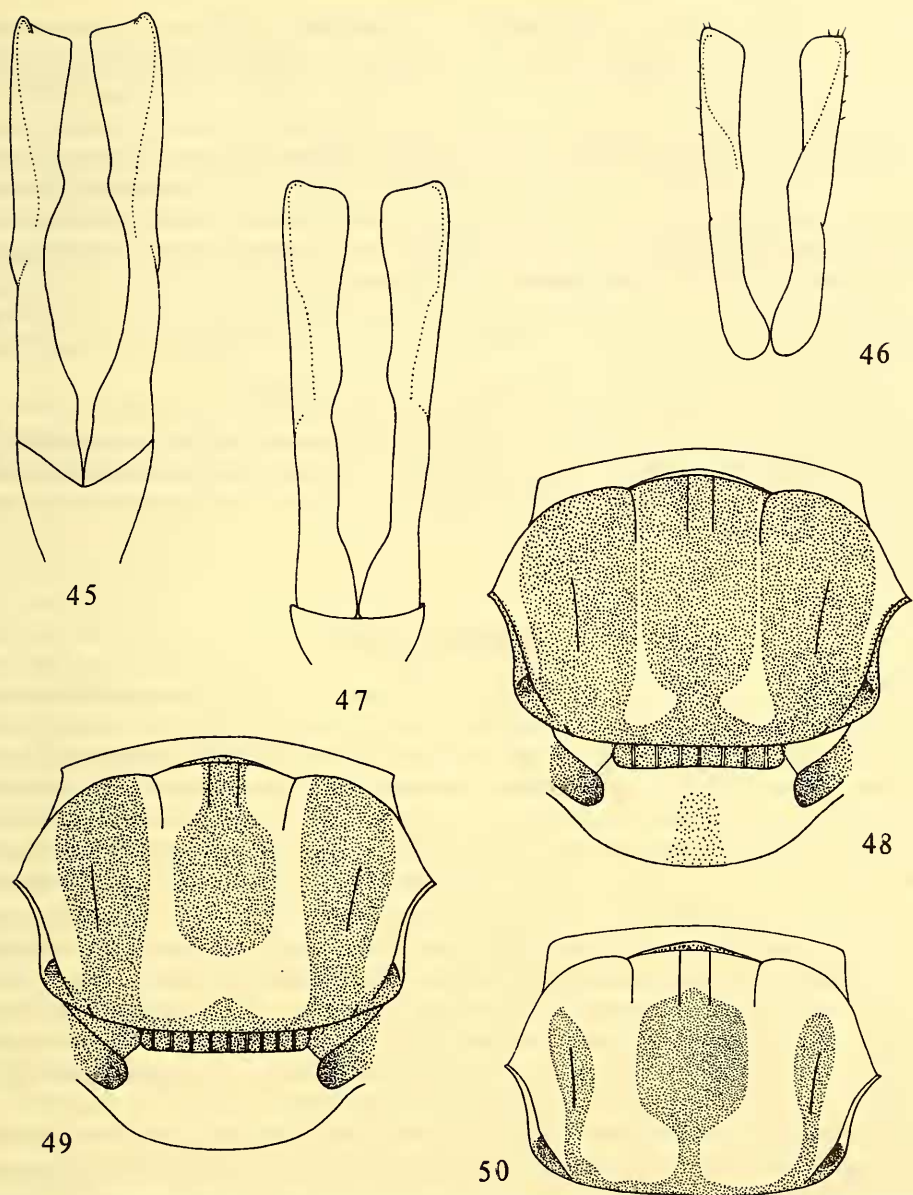


Fig. 45—47. Male genitalia of various new species of *Psenulus*. 45, *P. vientianensis*, holotype; 46, *P. impressus*, paratype; 47, *P. fyanensis*, holotype. Fig. 48—50. Thorax in dorsal aspect of various new species of *Psenulus*. 48, *P. fyanensis*, ♂, holotype; 49, *P. nigrolateralis*, ♀, holotype; 50, *P. pictus*, ♂, paratype

entirely yellow scutum and pronotum or scutum with black mark and lower part of pronotum black.

New records from NE. New Guinea: 1 ♀, May River, 6 June 1963, R. Straatman, light trap; 1 ♀, Wau, Bulolo River, 850—900 m, 24 Aug. 1965, J.

Sedlacek, Malaise trap; 1 ♂, Bulolo, 750 m, 5 Oct. 1965, J. Sedlacek, Malaise trap; 1 ♂, Wau, 1400 m, 27 Sept. 1969, A. B. Mirza; 1 ♂, Sepik, Angoram, 20—30 m, 14—16 Aug. 1969, J. L. Gressitt; 1 ♀, Baiyer River, 1000 m, 1—4 Sept. 1969, Y. Hirashima (BISH).

SE. New Guinea: 1 ♀ and 3 ♂, Mamai Pltn, E. of Port Glasgow, 150 m, 16 Febr. 1965; 2 ♂, same locality, 27 Febr. 1965, 1 ♂, Milne Bay, abt. 10 m, March 1965, all R. Straatman, light trap; 1 ♂, Cape Killerton, 0—5 m, 6—13 May 1965, W. A. Steffan, Malaise trap; 1 ♀, Central Dist., 3.2 km S. Vanapa River, Brown Road, 22—24 May 1965, W. A. Steffan and Y. M. Huang (BISH).

Papua: 1 ♀, Laloki Exp. Station, 10—17 June 1971, J. Stibick; 1 ♂, N. Dist., Onombususu, 26—28 Aug. 1971, J. Stibick (HT). Both specimens from Papua have an entirely yellow scutum.

Two females from NE. New Guinea, Green River - Sepik River junction, 200 m, 22 June and 27—28 June 1965, collected by R. Straatman with light trap (BISH) have yellowish-red thorax, antennae and fore and mid legs and resemble the subspecies *salomonensis* (Van Lith, 1972). As there are a few minor differences their identification is still uncertain.

Psenulus pictus sp. nov.

Five males, closely related to *P. interstitialis*, are much more richly marked with black, especially on scutum and mesosternum.

Black parts: a large longitudinal mark on scutum (Fig. 50) connected by a narrow line with triangle against posterior margin and two narrow lateral marks, covering the parapsidal sutures and connected with hind margin of scutum, enclosed area of propodeum with adjacent lateral spots on declivous part, median longitudinal groove and apical margin of declivous part, depressed lateral parts of scutellum and metanotum, epicnemium except lateral margin, mesosternum, marking roundly dilated on to mesopleura and connected with broad hind margin of mesopleura, which also covers hind margin of hypo-epimeral area.

Fore and mid legs including coxae and trochanters and hind coxae yellow, tarsi of fore and mid legs and hind legs except coxae orange-red. Gaster and petiole orange-red. Antennal segments 3—13 dorsally black, underside orange-red, often brownish on apical half. Veins of wings yellowish-brown.

Black marks on mesopleura in some specimens somewhat reduced. Lateral marks on scutum, in one case also median mark, not connected with hind margin. Length about 8.5 mm.

Various species belonging to the group of *P. interstitialis* are subject to much variation, especially *P. interstitialis*, but no transitional forms have been found at Wau, where also *P. interstitialis* occurs. After some hesitation I decided to consider the described males as a distinct species. The study of more material, especially of the female, should confirm this opinion.

NE. New Guinea: 4 ♂, holotype and paratypes, Wau, McAdam Park, 1500 m, 17 Sept. 1972, flying at *Hibiscus*, Mrs. E. van der Vecht (ML); 1 ♂, Wau, 1250 m, 4 May 1965, J. and M. Sedlacek (BISH).

***Psenulus araucarius* Van Lith**

Van Lith, 1972: 187 (Central New Guinea).

This close relative of *Psenulus interstitialis* has now also been collected in NE. New Guinea: 1 ♀, Mt. Missim, 980 m, 20 July 1969, J. L. Gressitt and Y. Hirashima (BISH).

The third antennal segment is over three times as long as broad at apex, the pygidial area is broader than in *P. interstitialis* and the base of the hind tibiae is smooth and flattened. This is the second known female, the male has not yet been found.

***Psenulus ornatus sumbaensis* subsp. nov.**

Female (holotype). — Length about 9 mm. Head black, labium reddish, mandibles yellow with dark tips, palpi yellowish. Scape of antennae yellow, flagellum reddish below, dark brown above. Thorax black with following yellow parts: dorsum of pronotum, pronotal tubercles, two partly indistinct lines on scutum, slightly broadened posteriorly and not reaching hind margin, (an indistinct brownish mark along lateral margins), two elongate marks along hind margin of scutellum, metanotum except small triangular mark on hind margin, two large marks on back of propodeum, each consisting of a pair of marks broadly connected below. Tegulae reddish. Fore and mid legs including coxae and trochanters, and hind coxae, yellow; fore and mid tarsi and entire hind legs reddish. Veins of wings brown. Gaster including petiole orange-reddish.

Raised part of frontal carina between antennae not broadened, no transverse carina below antennae. Clypeus very finely punctate, lower part more shining, margin depressed, protruding median part with two small teeth, distance between these teeth about $\frac{1}{6}$ of total distance there between the eyes. Frons and vertex shining. Apex of mandibles bidentate, a distinct reddish-brown inner tooth. Labium slightly emarginate. Antennae slightly clavate, third segment in frontal view about three times, segments 4—6 over $1\frac{1}{2}$ times, segments 7—8 about $1\frac{1}{3}$ times as long as broad at apex, segments 9—11 about as long as broad, last segment about $1\frac{1}{4}$ times as long as broad at base. Occipital carina ends normally in hypostomal carina.

Pronotal corners obtuse. Scutum, scutellum and metanotum shining, almost impunctate. Prescutal sutures short and fine. Enclosed area of propodeum triangular, ill-defined posteriorly, lateral parts with oblique striae. Propodeal longitudinal groove narrow. Upper half of declivous part of propodeum smooth and shining, lower half finely, mostly transversely, reticulato-carinate, sides more coarsely so. Metapleura impunctate, mesopleura including hypo-epimeral area and mesosternum shining, very finely sparsely punctate. Anterior oblique suture foveolate, widened upper part smooth. Apex of mid tibiae anteriorly with longitudinal ridge, posteriorly with three or four short reddish thorns. Base of hind tibiae with short longitudinal area consisting of fine red thorns. Apex laterally with three short red thorns. Inner tibial spur of hind legs bent downwards, about 30 degrees. First recurrent vein of fore wings interstitial, second recurrent vein

ending in third submarginal cell. Petiole about seven times as long as wide in the middle, in dorsal aspect, one and a half times as long as first tergite, cylindrical, dorsally somewhat flattened, a triangular pit at apex, sides with a narrow strip of fine punctures. Gaster shining with fine hair-bearing punctures. Pygidial area narrow, shining, with distinct lateral carinae.

Pubescence of head silvery, on clypeus somewhat appressed but leaving sculpture visible. Pubescence of thorax greyish, on mesosternum whitish and denser, lower part of epicnemial areas with a large round patch of appressed whitish pubescence. Pubescence of gaster yellowish-grey. Petiole with long, erect, yellowish-golden lateral hairs. Apical margins of gastral sternites 4—5 with dense short pubescence.

Male unknown.

West Sumba: 1 ♀, holotype, Rua, 1 Sept. 1949, Bühler and Sutter (NMB).

This female is undoubtedly closely related to *P. ornatus* Ritsema from East Java of which only a single male is known. However, the petiole of *sumbaensis* has no darkened apex and the legs are more reddish. *P. ornatus baliensis* (Van Lith, 1962) is very similar and has also an entirely reddish petiole but the black marking on dorsal and ventral side of its thorax is much less extensive.

***Psenulus ornatus baliensis* Van Lith**

Van Lith, 1962: 88—89 (*Psenulus interstitialis baliensis*; Bali).

Tsuneki (1971: 3—5) places *P. kankauensis* Strand, 1915, *P. tristis* Van Lith, 1962, *P. elegans* Van Lith, 1962 and *P. pempuchiensis* Tsuneki, 1971 as subspecies of *P. ornatus* Van Lith, 1962.

He was certainly right, the more so as there is also a difference in the colour of the veins of the fore wings. In *P. interstitialis* and its subspecies and closely related species, all restricted to the Papuan area, the veins are yellowish or pale yellowish-brown. In the other species of the group of *P. interstitialis*, including *P. luzonensis* and *P. ornatus*, the wing veins are brown.

Also *P. baliensis* has dark wing-veins and is now reclassified as a subspecies of *P. ornatus*.

***Psenulus fyanensis* sp. nov.**

Male (holotype). — Length about 7.5 mm. Head black; mandibles except dark tips and palpi yellow. Scape of antennae yellow, basal half of underside of flagellum yellowish, rest of antennae brown. Thorax black with following parts yellow: dorsal side of pronotum, pronotal tubercles, long narrow mark along tegulae and two median lines which are broadened near hind margin (Fig. 48), axillae, scutellum except median longitudinal brown mark, metanotum, four large marks on back of propodeum. Fore and mid legs yellow, trochanters and femora somewhat brown below, hind legs reddish-brown. Gaster including petiole reddish. Veins of wings dark brown.

Median part of anterior margin of clypeus straight, lateral teeth indistinct, separated by less than $\frac{1}{4}$ of total distance between the eyes. Raised part of interantennal carina narrow, ending below antennae in a transverse carina. Frons

and vertex indistinctly punctate, postocellar area not raised. Occipital carina ending in hypostomal carina. Antennae long, segment 3 about $2\frac{1}{2}$ times, segments 4—12 about twice as long as broad at apex, segment 13 about $2\frac{1}{2}$ times as long as broad at base. No tyloidea.

Pronotal corners rounded. Scutum and scutellum shining, sparsely finely punctate. Metanotum densely superficially punctate. Behind enclosed area of propodeum a narrow shining area, back and posterior half of sides of propodeum coarsely reticulate. Hypo-epimeral area, anterior plate of mesepisternum and metapleura smooth and shining, mesopleura with distinct but superficial and rather widespread punctures, punctation on mesosternum denser. Anterior oblique suture foveolate, widened upper part with transverse carinae. Legs slender. First recurrent vein of fore wings ending in second submarginal cell, near radial sector. Petiole cylindrical, about $1\frac{1}{2}$ times as long as first tergite which is about $1\frac{1}{2}$ times as long as broad at apex. Gaster indistinctly punctate.

Genitalia (Fig. 47) yellowish-red, slender, inner part of parameres somewhat transparent, apex straight with slightly projecting outer tip.

Pubescence of face silvery, mostly appressed, of rest of body whitish.

Female unknown.

Vietnam: 1 ♂, holotype, Fyan, 900—1000 m, 11 July—9 Aug. 1961, N.R. Spencer (BISH).

Laos: 1 ♂, paratype, Vientiane Prov., Ban Van Eue, 31 May 1966, native collector, Malaise trap (BISH).

The male from Laos has a much darker scutellum and the first recurrent vein of the fore wings is interstitial.

The shape of the parameres points to a close relationship with *P. interstitialis* and *P. luzonensis*.

***Psenulus nigrolateralis* sp. nov.**

Female. — Length about 8 mm. Head black; anterior margin of clypeus reddish, mandibles except dark tips yellow, palpi yellowish-brown, labrum reddish. Scape of antennae yellow, underside of flagellum yellowish-brown, upper side dark brown. Pronotum dorsally yellow. Scutum (Fig. 49) yellow with three black lines, median line anteriorly narrowed, posteriorly not distinctly connected with hind margin. Axillae black. Scutellum and metanotum yellow. Enclosed area of propodeum black, also adjacent black spot laterally. Back of propodeum yellow, longitudinal groove and two spots at apex of propodeum black. Sides of thorax including anterior margin of sides of propodeum, and underside of thorax black. Fore and mid legs including coxae and hind coxae yellow; hind legs including trochanters yellowish-red. Gaster including petiole reddish. Veins of wings dark brown.

Median part of clypeal margin protruding, indistinctly bidentate, teeth separated by about $\frac{1}{3}$ of total distance between the eyes. Interantennal carina narrow, no transverse carina below antennae. Occipital carina ending in hypostomal carina. Frons and vertex shining, minutely punctate, postocellar area not raised. Third antennal segment about $2\frac{1}{2}$ times, segment 4 about twice as long as broad at

apex, following segments gradually decreasing in length, segment 11 about $1\frac{1}{4}$ times as long as broad at apex, last segment about twice as long as broad at base.

Pronotal corners rounded. Scutum rather densely finely punctate, intermixed with larger punctures. Scutellum and metanotum sparsely finely punctate. Back of propodeum almost smooth, dorso-laterally some fine reticulation. Mesopleura and mesosternum shining, sparsely finely punctate. Anterior oblique suture foveolate, widened upper part smooth. Petiole cylindrical, about $1\frac{1}{2}$ times as long as first tergite. First tergite little longer than broad at apex. Gaster minutely punctate, pygidial area narrow, carinae on apical half almost parallel. Legs slender. First recurrent vein of fore wings interstitial.

Pubescence of face silvery, mostly appressed. Pubescence of rest of body whitish. Epicnemial areas below with round, densely, yellowish-white pubescent patch. Sternites 4—5 apically with dense short whitish pubescence. Petiole dorso-laterally and ventro-laterally with long erect whitish hairs.

Male unknown.

Laos: 1 ♀, holotype, Vientiane Prov., Ban Van Eue, 15 Jan. 1966; 1 ♀, paratype, Sayaboury Prov., Sayaboury, 15 Jan. 1966, native collectors (BISH).

This form certainly belongs to the group of *Psenulus interstitialis* and may be a dark subspecies of *P. luzonensis* (Rohwer).

Psenulus vientianensis sp. nov.

Male. — Length about 8 mm. Head black; mandibles except dark tips yellow, palpi pale yellowish-brown. Labrum reddish-yellow. Scape of antennae yellow, underside of antennae yellowish-brown, upper side dark brown. Thorax black with following parts yellow: dorsal side of pronotum, pronotal tubercles, axillae, metanotum and four elongate marks on propodeum. Scutum near pronotal tubercles with small yellowish-red mark and near hind margin with two very small yellow marks. Scutellum brown and black, outer lateral margins yellow. In upper corner of anterior plate of mesepisternum a vague yellowish spot. Fore and mid legs yellow, underside of femora largely brown. Hind trochanters, femora and tarsi brown, hind tibiae more reddish. Gaster including petiole reddish. Veins of wings dark brown.

Median part of anterior margin of clypeus indistinctly bidentate, teeth separated by about $\frac{1}{4}$ of total distance between the eyes. Raised part of interantennal carina narrow, ending below antennae in a transverse carina. Frons and vertex hardly punctate, postocellar area not raised. Occipital carina normally ending in hypostomal carina. Antennae slender, segment 3 over twice, segments 4—12 about twice as long as broad at apex, last segment over $2\frac{1}{2}$ times as long as broad at base. No tyloidea.

Pronotal corners rounded. Scutum and scutellum shining, finely sparsely punctate. Metanotum densely, superficially, punctate. Behind enclosed area of propodeum a smooth margin which is broader laterally, this smooth area defined postero-laterally by foveolae and a high carina. Back of propodeum coarsely reticulate, also greater part of sides of propodeum. Anterior plate of mesepisternum, mesopleura, hypo-epimeral area, metapleura and mesosternum smooth and

shining, hardly punctate. Anterior oblique suture foveolate, widened upper part almost smooth. Petiole cylindrical, about $1\frac{1}{4}$ times as long as first tergite, apex dorsally with small triangular depression. First gastral tergite about $1\frac{1}{3}$ times as long as broad at apex. Gaster minutely punctate. Legs slender. First recurrent vein of fore wings ending in first submarginal cell or interstitial.

Genitalia (Fig. 45) long and slender, yellowish-brown, inner part of parameres somewhat transparent, apex straight with outer corner distinctly projecting backward.

Pubescence of face silvery, mostly appressed, of rest of body whitish.

Female unknown.

Laos: 1 ♂, holotype, Vientiane Prov., Ban Van Eue, 15—31 May 1965; 1 ♂, paratype, same locality, 30 Nov. 1965, native collectors (BISH).

This species undoubtedly belongs to the group of *Psenulus interstitialis*. The genitalia differ little from those of *P. fyanensis*, but the colour is darker. Like some of the related forms described here as species, it may be a subspecies, perhaps of *P. ornatus*. The material is too scanty and the study of the genitalia still too insufficient to allow more definite conclusions.

***Psenulus continentis* Van Lith**

Van Lith, 1962: 97—98 (Malaya).

New record: 1 ♀, Singapore, Campus of University, 5 May 1972 (US).

This female agrees with the description of the holotype which was captured in Penang, in a car. The axillae are completely yellow. Anterior oblique suture black, foveolate, widened upper part almost without sculpture.

***Psenulus pulcherrimus pulcherrimus* (Bingham)**

Bingham, 1896: 443 (*Psen pulcherrimus*; Tenasserim).

Van Lith, 1962: 101 (*Psenulus pulcherrimus*); 1969: 200 (Vietnam); 1973: 140—141 (subspecies?; Nepal).

As in the case of a series of specimens from Nepal the variability of *P. pulcherrimus* is again shown by 26 specimens from Laos and one male from Thailand. Most often the scutum has a large postero-median yellow mark and two narrow marks along the sides. In one third part of the specimens from Laos the lateral marks are reduced or absent and in two of the females the scutum is entirely black. On the contrary in three males from Laos and in the male from Thailand the scutum is not only yellow marked postero-medially and laterally, but also anteriorly. The anterior marks range from two small separate triangular spots (Fig. 51) to a more or less broad band (Fig. 52), in one case distinctly connected with the lateral marks (Fig. 53). Extensive yellow marking of the scutum does not run parallel with the colour of the scutellum as the two females with entirely black scutum have the scutellum completely or nearly completely yellow. On the contrary, in four males with much yellow marking of the scutum the anterior half or fourth of the scutellum is black. Hind femora, first tergite and apex of petiole

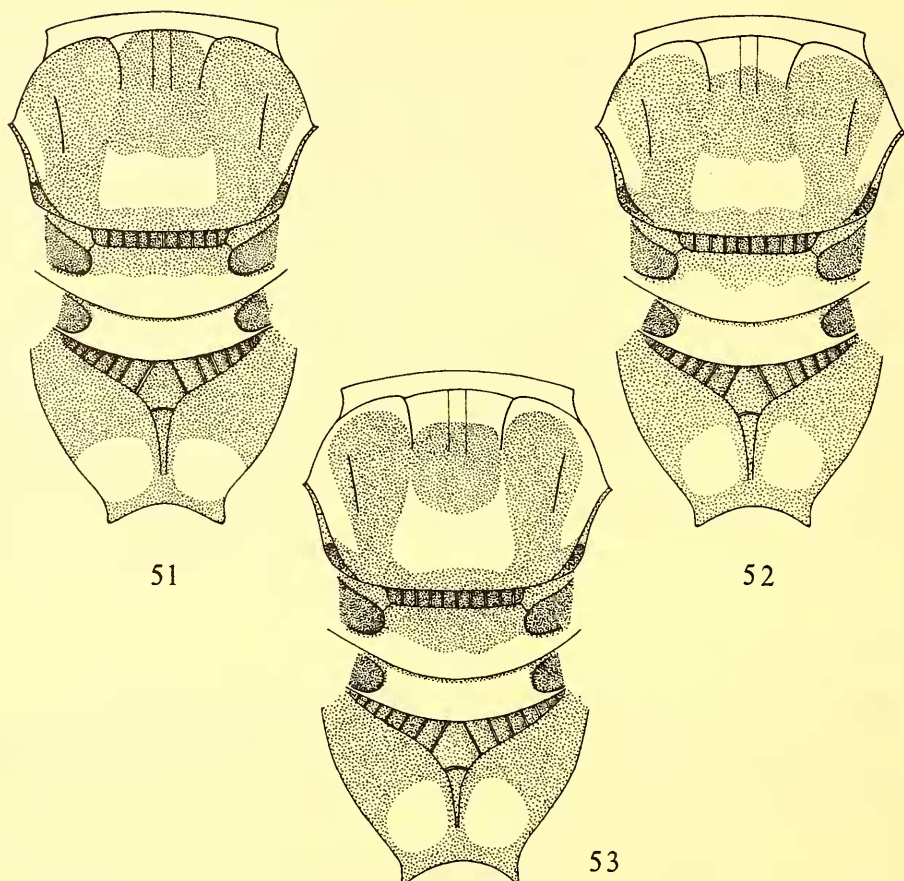


Fig. 51—53. Dorsal and posterior side of thorax of *Psenulus pulcherrimus pulcherrimus* (Bingham), ♂, 51—52, Laos; 53, Thailand

are not darkened. It seems that scutum and propodeum are richer coloured in the males, in the females the scutellum is more yellow.

Darkening of fore and mid femora occurs in the Laos material only in a few females, that of the first tergite in one female and six males. In half of the females and males the apex of the petiole and the hind femora are darkened. Both colour forms occur in the same province, even a female and a male taken on the same date in the same locality of the province of Wapikhamthong are different. Six of the seven specimens from Sayaboury have a darkened apex of petiole and hind femora whilst all of the ten specimens from Ban Van Eue in Vientiane Province have entirely reddish petiole and hind femora. In the material from Nepal the hind femora are always much darker brown, almost black and the first tergite is darkened.

In the male from Singapore recorded below the petiole is dark brown at the apex and the ventral plate is dark brown except a reddish mark near the posterior margin. The base of the first tergite is brownish-black, the hind femora except

apex are dark brown, also the apical half of the hind tibiae. Yellow marks on propodeum large. Scutellum with narrow black anterior margin.

In the female from Malaya the apex of the petiole, the base of tergite 1 and $\frac{1}{3}$ of the hind tibiae are brown.

First records from Laos: Vientiane Prov., Gi Sion Vill., de Tha Ngone, 1 ♀, 9—16 Jan. 1966, 1 ♂, 7—21 Febr. 1965; Ban Van Eue, 4 ♀, 15—31 May 1965, 15 Febr. 1966, Malaise trap, 29 March and 30 June 1966, 6 ♂, 29 April 1966, light trap, 15 May, 15—31 May and 31 May 1966, Malaise trap, 15 Dec. 1966; Sayaboury Prov., Sayaboury, 3 ♀, 12 Febr. and 13 April 1966, 4 ♂, 15 Jan. and 2 March 1966, 2 ♂, 30 Sept. 1966, light trap; Wapikhamthong Prov., Wapi, 3 ♀, 15 March, 30 March and 31 May 1967, 3 ♂, 30 March, 15 April and 31 May 1967, light trap; Sedone Prov., Pakse, 1 ♀, 31 May 1967; Savannakhet Prov., Savannakhet, 1 ♂, 15 April 1967, all by native collector (BISH).

First record from Thailand: 1 ♂, Trang Prov., Khaophappa Khaochang, 200—400 m, 3 Jan. 1964, G. A. Samuelson (BISH).

First record from Malaya: 1 ♀, Kedah, Sungei Toh Pawang Estate, 10 Aug. 1966, H. T. Pagden (BM).

First record from Singapore: 1 ♂, Postal District 22, 26 Sept. 1970, C.G. Roche (CGR).

***Psenulus melanonotus* Van Lith**

Van Lith, 1969: 203 (West Sumbawa).

First record from Flores: 1 ♂, C. Flores, Moni, Wolowaru, 11 Nov. 1949, Bühler and Sutter (NMB).

This male is darker than the two males from Sumbawa. Scape of antennae pale brown instead of yellow, pronotum dorsally brown, no large yellowish-white spots, hind margin of scutellum brownish with small yellow spot, metanotum pale yellow with brown fore margin and vague median brown spot instead of being completely ivory-coloured, propodeum with two vaguely defined circular yellow spots. Only hind margin of pronotal tubercles yellowish-brown. Fore legs yellow, femora brown below; mid legs yellow, trochanters brown below, femora except apical foreside brown; hind legs brown, only dorso-basal $\frac{2}{5}$ instead of $\frac{1}{3}$ of hind tibiae pale yellow.

Propodeum behind enclosed area very finely striate instead of smooth.

The differences between this male and the two from Sumbawa do not seem to be of great importance.

***Psenulus leucognathus* sp. nov.**

Male. — Length about 6 mm. Head black; scape and mandibles ivory-white, apex of mandibles, also labrum, reddish, palpi and underside of flagellum pale yellowish. Thorax black, with following ivory-white parts: pronotum except central and lateral parts, pronotal tubercles, two lateral marks on metanotum and two small marks on back of propodeum. Tegulae reddish transparent. Trochanters, dorsal side of fore and mid femora, fore and mid tibiae except a brown mark

on back, tarsi of fore and mid legs and basal $\frac{2}{3}$ of hind tibiae ivory-white, rest of hind legs dark brown. Petiole dark brown, hind margin of ventral plate and gaster red. Veins of wings black.

Raised part of interantennal carina narrow, ending below antennae in a transverse carina. Anterior margin of clypeus bidentate, distance between apices of teeth about $\frac{1}{5}$ of total width of margin. Frons and vertex shining. Postocellar area narrow. Occipital carina ending in hypostomal carina. Base of antennae somewhat flattened, segments rounded below, segment 3 about twice, segments 4—9 over $1\frac{1}{2}$ times and segments 10—12 about $1\frac{1}{2}$ times as long as broad at apex, last segment about twice as long as broad at base. No tyloidea.

Pronotal angles obtuse. Punctuation of scutum distinct, irregular, interstices centrally a few times as large as punctures, laterally punctures finer. Scutellum and metanotum sparsely punctate. Enclosed area of propodeum triangular, with oblique carinae, back and sides of propodeum coarsely reticulate, behind enclosed area a narrow smooth area. Mesopleura and mesosternum finely sparsely punctate, hypo-epimeral area smooth. Anterior oblique suture foveolate, widened upper part with a few transverse carinae. Legs normal. Petiole about as long as first tergite, cylindrical, dorsally somewhat flattened. Gaster slender, first tergite longer than broad at apex.

Face and tempora densely, mostly appressed, silvery pubescent, rest of body whitish pubescent.

Female unknown.

South India: 1 ♂, holotype, Kerala State, Walayar Forests, 200 ft, Sept. 1959, P.S. Nathan (UI, deposited on permanent loan in USNM).

P. leucognathus belongs to the *Psenulus pulcherrimus*-group. It is very close to *P. melanotus* from Sumbawa, from which it differs in the red gaster and the lesser extent of the whitish marking. Both species are easily distinguished from other species of the group by the ivory-white mandibles and whitish marks on pronotum, metanotum and propodeum.

***Psenulus extremus* Van Lith**

Van Lith, 1966: 45—46 (*Psenulus carinifrons extremus*; New Guinea); 1969: 206 (*Psenulus extremus*).

New records from NE. New Guinea: 1 ♀, East Highlands Aiyura, 1800—1900 m, 6 Jan. 1965, J. Sedlacek (BISH); 1 ♂, Huon Gulf, Morobe District, 22 May—19 June 1937, J. L. Froggatt (BM).

The male is slightly paler coloured than the allotype and paratype recorded in 1966. Pronotum, posterior half of scutellum and metanotum brown. Pronotal tubercles yellowish-brown. Fore and mid tibiae entirely yellow. Basal $\frac{2}{3}$ of hind tibiae yellow in dorsal aspect, also hind basitarsi yellow.

Antennal segments 7—12 with low, yellowish-brown, longitudinal ridge (tyloidea).

***Psenulus carinifrons carinifrons* (Cameron)**

Cameron, 1902: 288—289 (*Psen carinifrons*; India).

Van Lith, 1962: 103—104 (*Psenulus carinifrons*); 1966: 43 (*Psenulus carinifrons carinifrons*).

Female (first description). — Length 7 mm. Head and thorax black; scape of antennae yellow, underside of flagellum yellowish-brown. Mandibles yellow with dark red tips. Palpi straw-yellow. Pronotum, pronotal tubercles, scutellum and metanotum yellow. Fore and mid legs including trochanters yellow, tarsi somewhat brownish. Hind trochanters brownish-yellow, femora and tarsi dark brown, tibiae including apical spurs yellow, in lateral view apical $\frac{1}{5}$ of hind tibiae dark brown. Petiole dark brown, ventral plate, first tergite and second segment except narrow apical margin reddish, rest of gaster blackish-brown. Veins of wings dark brown.

Frons slightly convex, distinctly finely punctate, interstices mostly as large as punctures, vertex still more finely punctate, interstices larger.

Scutum finely punctate, interstices larger than punctures. Scutellum finely sparsely punctate. Back of propodeum smooth behind enclosed area, finely obliquely striate on declivous lateral parts, upper margin of sides with coarse reticulate carination. Mesopleura shining, sparsely punctate.

Pakistan: 1 ♀, Karachi, date in leadpencil indistinct (2.9.03?), T. R. Bell (BM). With note 'out of reedgrass stems; larva feeds on minute froghoppers'.

Two females from Laos are very similar but their gaster is slightly darker. Petiole black, narrow apical margin of ventral plate of petiole reddish. In the female from Tha Ngone the first tergite is dark reddish-brown, second sternite brown, second tergite basally with lateral, round, red mark, hind margin on both sides with narrow reddish mark. Hind trochanters and femora black, hind tibiae yellow, slightly more than apical $\frac{1}{4}$ black. Length 6.5 mm. In the female from Sayaboury the first tergite is black, base of second tergite laterally with round red mark, slightly more than apical $\frac{1}{3}$ of hind tibiae black.

Laos: 1 ♀, Vientiane Prov., Tha Ngone, 28 Dec. 1965; 1 ♀, Sayaboury Prov., Sayaboury, 12 Febr. 1966, native collector (BISH).

***Psenulus carinifrons rohweri* Van Lith**

Van Lith, 1962: 108 (pro parte; Java, Kangean Is.); 1966: 45; 1969: 205—206 (Luzon, Formosa).

First record from Sumba: 1 ♀, W. Sumba, Kodi, 3 Aug. 1949, Bühler and Sutter (NMB).

The apical third of the hind tibiae is black in dorsal aspect. Hind tarsi including basitarsi dark brown.

***Psenulus carinifrons malayanus* Van Lith**

Van Lith, 1969: 206 (Malaya, Singapore, Sumatra, Borneo).

New records from Borneo: 2 ♀, 9 ♂, Sarawak, Kuching, 14 Jan. 1968, C. G. Roche (CGR).

Singapore: 1 ♂, Postal District 17, 17 Jan. 1971, C. G. Roche (CGR).

Malaya: 1 ♀, Penang I., Baker (USNM); 1 ♀, 2 ♂, Perak, Tapah Hill Forest Reserve, 2700 ft, 21 Oct. 1973, C. G. Roche (CGR).

***Psenulus carinifrons scutellatus* Turner**

Turner, 1912a: 54 (*Psenulus? scutellatus*; NE. Australia); 1916: 128 (*Neofoxia scutellatus*).

Van Lith, 1962: 108 (*Psenulus scutellatus*); 1966: 43—44 (*Psenulus carinifrons scutellatus*); 1969: 203—205 (New Guinea, Ambon, Buru, Mindanao); 1970: 103.

New record from Buru: 1 ♀, Station 9, 18 May 1921, L. J. Toxopeus (MA).

***Psenulus sogatophagus* Pagden**

Pagden, 1933: 97—101 (Malaya).

Van Lith, 1966: 42 (Thailand, Assam?)

First records from Laos: 1 ♀, Vientiane Prov., Gi Sion Vill., de Tha Ngone, 24—31 Oct. 1966, native collector; 1 ♂, Sedone Prov., Paksong, 17 May 1965, P. D. Ashlock (BISH).

***Psenulus xanthognathus xanthognathus* Rohwer**

Rohwer, 1910: 660 (*Psenulus (Neofoxia) xanthognathus*; Luzon).

Van Lith, 1962: 104—107 (*Psenulus carinifrons xanthognathus*; Luzon); 1966: 44—45; 1969: 206 (*Psenulus xanthognathus xanthognathus*); 1972: 196.

New records from Luzon: Laguna, 1 ♀, Los Baños, Mt. Makiling, Baker, 1 ♂, Los Baños, Baker (USNM), Laguna, Agricultural College, 2 ♀, 2 ♂, 6 Sept. 1931, F. C. Hadden (BM); 1 ♂, Albay Prov., Libon, Caguscus, 200 m, 12 May 1965, H. M. Torrevillas (BISH); 2 ♂, Mount Prov., Ifugao, Mayoyao, 1000—1500 m and 1200—1500 m, 9 July and 3 Sept. 1966; 3 ♀ and 8 ♂, Rizal, Mt. Montalban, Wa-wa Dam, 150—200 m, 25 Febr.—19 March 1965, H. M. Torrevillas (BISH).

Antennal segments 5—12 or 6—11 of male with indistinct, low, somewhat shining tyloidea.

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